DOCUMENT RESUME

ED 385 211 HE 028 499

AUTHOR	Engel, C., Ed.; And Others
TITLE	Annals of Community-Oriented Education, 1993.
INSTITUTION	Network of Community-Oriented Educational Institutions for Health Sciences (Netherlands).
REPORT NO	ISBN-90-73026-04-0; ISSN-0924-9192
PUB DATE	93
NOTE	372p.; Published annually. For volume 5, see ED 358 752; for volume 7, see HE 028 500.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	Annals of Community-Oriented Education; v6 1993
EDRS PRICE	MF01/PC15 Plus Postage.
DESCRIPTORS	Admission Criteria; *Allied Health Occupations Education; Career Choice; Comparative Education; Curriculum; Educational Methods; Educational Policy; Foreign Countries; Global Education; Health Occupations; Higher Education; International Organizations; *Medical Education; *School Community Programs; Teacher Education
IDENTIFIERS	*Community Oriented Schools; Nongovernmental Organizations

ABSTRACT

This volume presents 33 papers addressing various aspects of community-oriented education; lists relevant and current books, articles and papers; and provides basic information about the Network of Community-Oriented Educational Institutions for Health Sciences, the international non-governmental organization. The papers are grouped into seven categories: (1) community-oriented education (examples from the Sudan, Philippines, Australia, Zimbabwe, and Kenya); (2) curriculum and methods (papers from Germany, China, Sudan, Australia, and the United Kingdom); (3) policy and leadership (from the United States and Australia); (4) resources (from the United States, United Kingdom, and Canada); (5) student selection (from the Sudan); (6) career choice (Malaysia); (6) teacher training (Sweden and Australia); (7) and worldwide medical education. A section on literature lists recent books, journals and newsletters, and recent papers on the following topics: assessment and accreditation, clinical reasoning and critical reasoning, community-based education, education (policy and administration), ethics, problem-based learning, selection of students, teaching and learning, and teaching teachers. The final section provides information on the Network including a listing of member institutions, a listing of the Network executive committee and secretariat, a statement of the Network objectives, and an explanation of membership. (Many individual papers contain references.) (DB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 385 211

Volume 6
1993

Published by
the Network of Community-Oriented
Educational Institutions for Health Sciences

Annals of Community-Oriented Education

BEST COPY AVAILABLE

HE 028 499

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

Editors
C. Engel, H. Schmidt, P. Vluggen

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Network of Community-
Oriented Educational
Institutions for Health
Sciences

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

The Annals of Community-Oriented Education are published by the Network of Community-Oriented Educational Institutions for Health Sciences, a non-governmental organisation in official relation with the World Health Organization and the United Nations.
Member institutions of the Network receive a number of free copies.
Subscription rates are US $ 25 for non-members from developing countries and US $ 40 for those from industrialised countries. This includes bank administrative costs. Postage will be charged.
Price for 20 copies or more on application. Copies may be ordered from the Secretariat of the Network, University of Limburg, P.O.B 616, 6200 MD Maastricht, The Netherlands.

Publication Policy

The Annals of Community-Oriented Education publish original investigations and descriptive or theoretical papers dealing with aspects of community-oriented, health-professions education. The Editors maintain a liberal policy concerning the nature of the subjects to be addressed. The Annals aim to encourage the study of instructional practices, approaches to student assessment and curricular aspects specific to this domain. In addition, papers addressing the broader issue of health care research will also be considered to the extent that they provide directions relevant for health professions education. The editors in particular welcome contributions from investigators who are new to the field. The editors see as one of their objectives to help authors improve their contribution, provided the subject is of interest to a broad audience and the study is methodologically sound. **Authors are responsible to ensure that papers offered for publication in the Annals have not been published and are not being submitted to other journals.**

Manuscripts

Manuscripts should be submitted **double line spaced and in duplicate** to the editor, Charles E. Engel, Network Secretariat, P.O.B 616, 6200 MD Maastricht, The Netherlands. Whenever possible, a floppy disk should be attached containing the text of the contribution processed by Word Perfect on an IBM-compatible computer, by one of the Apple Macintosh word processors (MacWrite, Microsoft Word), or as a text-only file.

Instruction to Authors

Please follow the style adopted in the Annals, and present the typescript with **double spaced lines** and wide margins. Tables and Figures, each with their captions, must be attached separately from the text. It is particularly important that the references are complete and follow the examples given below.

Neufeld, V.R., & Barrows, H.S. (1974). The McMaster philosophy: An approach to medical education. *Journal of Medical Education, 49,* 1040-1050.

Elstein, A.S., Shulman, L.S., & Sprafka, S.A. (1978). *Medical problem solving: An analysis of clinical reasoning.* Cambridge, MA: Harvard University Press.

Coulson, R.L., & Osborne, C.E. (1984). Insuring curricular content in a problem-based learning program. In: H.G. Schmidt, & M.L. de Volder (Eds.). *Tutorials in problem-based learning.* Assen, The Netherlands: Van Gorcum.

Norman, G.R., Muzzin, J.L., & Rosenthal, D. (1985). *Expert-novice differences in perception and categorisation in dermatology.* Paper presented at the Annual Meeting of the American Educational Research Association, Chicago.

Manuscripts should reach the editor by 31 October, 1993.

BEST COPY AVAILABLE

Volume 6
1993

Published by
the Network of Community-Oriented
Educational Institutions for Health Sciences

Annals of Community-Oriented Education

Editors
C. Engel, H. Schmidt, P. Vluggen

Editorial Board

Olanipekun Alausa, National Postgraduate Medical College, Nigeria
Henk van Berkel, University of Limburg, The Netherlands
Esmat Ezzat, Suez Canal University, Egypt
Tamas Fülöp, 19, Avenue du Lignon, 1219 Geneva, Switzerland
Jacobus Greep, University of Limburg, The Netherlands
Arthur Kaufman, University of New Mexico, United States of America
Ron McAuley, McMaster University, Canada

© Copyright 1993
Network of Community-Oriented Educational Institutions for Health Sciences

ISBN 90-73026-04-0
ISSN 0924-9192

Annals of Community-Oriented Education
1993
Volume 6

© Copyright 1993
of the Network of
Community-Oriented
Educational Institutions
for Health Sciences

CONTENT

Page

Editorial 9

Community-Oriented Education

Challenges of a New Community-Oriented Medical Curriculum: A Workshop to Identify Difficulties and Practical Solutions 11
David A. Okello, E.B.L. Ovuga and Samuel Luboga

Short Intensive Courses for Primary Health Care Leadership in Sudan 19
Elbagir Ali Elfaki, Ibrahim M. Abdelrahim and Abbas O. Elkarib

Update in Innovative Health Manpower Production: The School of Health Sciences in Leyte, Philippines 27
Isabel Tantuico-Koh and Rolando O. Borrinaga

Community Orientation: Ups and Downs at Newcastle, N.S.W. 35
John D. Hamilton

Community-Based Medical Education and Curriculum Change: The Field Attachment Programme of the School of Medicine of the University of Zimbabwe 43
Charles H. Todd and Catherine M.R. Tsikirayi

Community Orientation at the Faculty of Health Sciences Moi University: A Personal View 53
R.C. Godfrey

Community-Based Medical Education: A Review of the Oldest Programme in Nigeria. 69
M.C. Asuzu

Ogun State University COBMES Programme: Progress, Prospects and Problems 83
Akin Osibogun and Olanipekun Alausa

Community-Oriented Medical Education in Japan and the Wakuya Project 89
Masaji Maezawa and Hiroyuki Wakamatsu

Learning the Basics of Medicine in General Practice in the Faculty of Health Sciences, Linköping, Sweden 97
Mats Foldevi and Erik Trell

The Contribution of General Practice to the Medical Curriculum 115
A.L.A. Reid

The Hawai'i Education Community Partnership Programme 125
Henry Foley and Grahame Feletti

Curriculum and Methods

Towards Change in Medical Education at the Free University of Berlin, Germany 141
Christoph G. Schmidt

Student Initiative in Problem-Based Learning 151
Claudia Kiessling and Ingela-Toa Schwinge

The reform of Medical Education at the Three-Year Junior Medical Faculty of Jinzhou Medical College of China 159
Yongchen Guan, Youzhi Shao and Mingda Yang

Maternal and Child Health Training at the Gezira Medical School 163
Omer Ahmed Mirghani

Education and Training in the Early Postgraduate Years: The N.S.W Experience 173
Kath Schofield and Nicholas A. Saunders

Multi-Professional Education at the Postgraduate Medical School, University of Exeter, United Kingdom 181
Denis Pereira Gray, Rita Goble, Sheila Openshaw, Keith Bolden, Michael Hall, Antony Lewis, Robert Jones, Julian Scott, Ann Hall, Margaret Damant and Lyn Hunter

Policy and Leadership

Medical Education in Transition 191
Robert W. Marston and Roseann M. Jones (Editors)

Educating Medical students: Assessing Change in Medical Education - The Road to Implementation 197
M.B. Anderson

Observations on Redirection of an Iceberg: Leading Educational Reform in Medical Schools 207
Ron W. Richards

Community Partnerships: Redirecting Health Professions Education toward Primary Health Care 219
Ron W. Richards

Medical Accreditation: The Australian Experience 231
John D. Hamilton

Resources

Educational Materials for Health Workers at Low Cost: The PAHO Expanded Textbook and Instructional Materials Programme (PALTEX) 243
Richard Marks and Carlos Vidal

Teaching Aids at Low Cost: A Non-Governmental Organisation 251
David Morley

Nursing Times Open Learning Programme: An Innovation in Collaboration and Design 259
Anne Palmer

Standardized Patients: A Trainer's Perspective 273
Sydney M. Smee

A New Tool for Change in Intersectoral Systems 283
Lawrence F. Raymond and George L. Dorros

Student Selection

A Review of Examination Performance in the Faculty of Medicin, University of Gezira 291
Ahmed Awad Abdel-Hameed

Career Choice

Career Preferences of Medical Students in a Community-Oriented Medical School 301
Rogayah Jaafar and Zulkifli Ahmad

Teacher Training

Training Tutors in a Problem-Based Learning Curriculum 311
Margareta Koch

Work-Based Clinical Education: A Distance Learning Programme 321
Ken Cox

Medical Education Worldwide

A Global Strategy for Medical Education: Partners in Reform 327
Henry Walton

From the Literature

Some Recent Books 333

Some Journals and Newsletters 336

Some Recent Papers 337
- Assessment and Accreditation 337
- Clinical Reasoning and Critical Reasoning 342
- Community-Based Education 344
- Education - Policy and Administration 348
- Ethics 351
- Problem-Based Learning 357
- Selection of Students 367
- Teaching and Learning 369
- Teaching Teachers 377

Network Information

Member Institutions 383

Network Executive Committee and Central Secretariat 385

Aims and Objectives of the Network of Community-Oriented Educational Institutions for Health Sciences 386

Membership of the Network 388

Editorial

Once more the wide range of contributions to this Volume of the **Annals** reflects the extensive spectrum of interests and concerns of the Network, its members and like minded colleagues everywhere. The main section, devoted to **Community-oriented Education**, includes eleven substantial contributions from Australia, Hawai'i, Japan, Kenya, Nigeria, the Philippines, Sudan, Sweden and Zimbabwe. Attention is also focused on the role of general practice in undergraduate education, on interprofessional postgraduate education, as well as on reflective and critical evaluation of courses and curricula.

The next section, **Curriculum and Methods**, might equally well have been entitled **Change**. Each of the six papers illustrates significant changes in undergraduate and postgraduate education that have been undertaken by students, teachers and administrators in Australia, China, Germany, Sudan, and the United Kingdom.
This emphasis on change is continued in the section on **Policy and Leadership** which illustrates the great potential influence and thus responsibility of charitable foundations and other grant giving agencies to support fundamental reexaminations of established practices and to provide tangible leadership in research and development. That such leadership for educational change is not solely dependent on funding is convincinly illustrated by the paper on accreditation of medical schools in Australia.

More immediately practical issues are discussed in the section on **Resources**. A paper on a remarkable scheme for making inexpensive educational materials available in Latin America is followed by a description of a private intitiative that has succeeded in the worldwide distribution of a variety of such material at very low cost.
Next follows a discussion on further education for nurses which uses a major journal as its medium for distance learning.

The last paper in this section is a classical example of "why did noone else think of this a long while ago?". It describes how consensus decision making can be materially advanced through using visual symbols to illustrate abstract ideas and thus make meaning and intention clear to everyone.

Student Selection in relation to performance during the undergraduate course in Sudan is followed by a contribution from Malaysia to the relationship between educational experiences and **Career Choice**.

The main body of the Annals concludes with two papers on **Teacher Training** from opposite ends of our planet. From Sweden comes a reflection on how to train academics as tutors who can facilitate problem-based learning for small groups during the undergraduate years. Australia has contributed an equally important illustration of how clinical teachers in any of the health professions can be assisted through distance learning to perfect their

clinical teaching by reflecting on their own experience and practices.
As in previous years, this Volume also includes a substantial section of information **From the Literature**; recently published books, journals and newsletters that have not been listed in earlier Volumes, and a selection of abstracts of papers published in 1992 on specific aspects that are of particular interest within the Network.

We trust that none of our readers will be discouraged by the size of this Volume. We hope that every reader will find something that is challenging, interesting and useful.

The Editors

Annals of Community-Oriented Education
1993, Vol. 6, 11-18

COMMUNITY-ORIENTED EDUCATION

Challenges of a New Community-Oriented Medical Curriculum. A Workshop to Identify Difficulties and Practical Solutions

David O. Okello, E.B.L. Ovuga and Samuel Luboga
Makerere Medical School
Kampala, Uganda

Abstract

The new community-oriented medical education programme at Makerere University faces several logistical and philosophical problems. Although many of the logistical problems were expected at the inception of the programme, staff skepticism and criticism threatened to undermine the concept that led to the introduction of the new curriculum in 1989. Some members of the staff expressed the fear that the innovation was introduced when the medical school was not ready for such change. It is argued that the tutors in the programme lack experience in the new system. A remedial workshop is described.

Introduction

The Faculty of Medicine at Makerere University, Kampala, Uganda, adopted a community-oriented medical curriculum in 1989. The aim was to produce community-oriented doctors able and willing to serve their communities and deal effectively with health problems at primary, secondary and tertiary levels. (Hamad, 1991). This aim was to be achieved mainly by demonstrating to the students, through their involvement in community medicine, that adaptation to grass roots conditions can be carried out to benefit the health of the community. At the end to the training, the students are expected to demonstrate knowledge of the appropriate measures (promotive, preventive and curative) that can be used to identify and solve the health problems of individuals, families and communities (Omotara et al., 1992). In addition, the students should be able to assess the health of the community and to plan, manage and evaluate community health services. (Padonu, 1987).

Medical care in Uganda has for long been provided through hospitals, health centres (types I,II), dispensaries, maternity units, sub-dispensaries and aid posts. When fully staffed a health centre has a medical assistant (with three years training after completion of senior six secondary schooling), a qualified midwife and a nursing assistant; it provides elementary in-patient and out-patient care. A dispensary provides elementary curative care through a medical assistant and, in the case of a maternity unit, a trained midwife. Sub-dispensaries are manned by paramedical staff (with three year training after completing

Requests for reprints should be sent to D. Okello, Makerere Medical School, Box 7072, Kampala, Uganda.

senior six secondary schooling) and provide rudimentary curative care. Aid posts provide outpatient care through weekly or twice weekly visits by a paramedic. Usually each of the 38 districts in the country has at least one hospital. However, the bed-strength and the staff-size of the hospital varies from district to district. With this arrangement, some 27 percent of the population are within 5 km of the nearest health unit, while 57 percent are within 10 km. However, coverage is uneven, and not all have equal access. Limited coverage is largely a rural phenomenon, while urban populations have close proximity to hospital care.

Although this level of access to health care facilities might be regarded as reasonable for curative services, it has serious implications for preventive care. The majority of the population in Uganda has to walk at least two hours to a facility; a sick person or a mother carrying a child might take much longer. Distance may well influence the decision to seek preventive care.

The ratio of physicians to the population has been reduced by more than 50% in the last 25 years, from about one per 11,000 in 1965 to about one in 28,000 in 1991. The country has suffered from depletion of medical doctors, particular from the beginning of the 1970s, when more than 700 physicians left the country following the expulsion of Asians. Others left the country in the remaining decade, either to escape the civil war or for economic reasons.

The medical school had an average annual intake of about 90 students during the past three years, with an average of 53 graduates annually at the end of the five year course.

Makerere Medical School has been the sole training centre for physyians in the country. It has six major basic sciences departments and ten clinical units. The teaching staff fluctuates but averages about ninety, although the total establishment is around 175 employed by the University (Table I). There are a number of other doctors in the teaching hospital, employees of the Ministry of Health, who also participate in teaching in the clinical departments.

Traditional medical care has been too expensive and provided services for only a small proportion of the population, those who managed to reach the health care institutions. Besides, it laid emphasis mainly on curative services. In view of the high maintenance cost of hospitals and shrinking resources for health care, the government is now developing a new health policy with the goal of health for all through a nation-wide network of preventive and curative health services with a self sustaining cost recovery system. Particular emphasis is placed on maternal and child health, environmental sanitation, provision of essential drugs, water supply, and health education. This new policy also emphasizes health care activities based on the health centre and in the community through the principles of primary health care. The goal of the system is to extend health coverage to all Ugandan citizens by the turn of the century through community participation.

Table I. Distribution of staff at Makerere medical school

Department	Numbers	
Basic science teachers	27	(30%)
Biochemistry	7	
Anatomy	4	
Physiology	5	
Microbiology	2	
Pathology	5	
Pharmacology	4	
Clinical teachers	63	(70%)
Medicine	9	
Obstetrics & gynaecology	10	
Surgery	10	
Paediatrics	8	
Preventive medicine	8	
Radiology	2	
Anaesthesia	4	
E.N.T.	3	
Ophthalmology	4	
Psychiatry	5	
Total	90	

The full establishment should be 175 basic science and clinical academics.

The new community-oriented medical education at Makerere is, therefore, in line with the new government health policy. The medical school went through a number of consultations with health policy makers to produce a curriculum that is community-oriented. An overview of the community aspects of the curriculum is shown in Table II.

Although there are precedents in other universities within the African region, the greatest problem with this project is the fact that it is totally new to Ugandan medical education. Knowledge about the nature of community programmes in Makerere is limited to the Department of Public Health and to the maternal child health (MCH) programmes in Paediatrics. Hence, this new experience faces several unforeseen problems. Some Faculty members have expressed lack of guidance from tutors, and sometimes, even about a tutor's lack of understanding of what is to be achieved by the students. Some tutors in the clinical departments cannot see the relevance of the community-based subject to the lecture

Table II. Outline of community-based clerkships

Year of study	Programme of activities	Nature of Student's Report	Period of Clerkships
1	Communication. Interview experience. Study life style of families and characteristics of community. Establish socio-economic status of average family. Work on appropriate assignment. Suggest provisional research ideas.	Interview experience. Expectations of interviewer. Expectations of interviewee. Lessons from interview. Construct age structure. Construct socio-economic structure of community.	5 weeks in the year
2	Study factors in health and disease. Environment and health. Culture and health. Traditional medicine. Work on appropriate assignment. Suggest provisional research ideas. Culture and health.	Man and the environment. Environment and disease. Culture and environment. Cultural basis of traditional medicine. Environmental basis of traditional medicine.	5 weeks in the year
3	Laboratory diagnosis. Trauma and emergency management. Primary surgical and orthopaedic procedures. Fluid replacement therapies. Home visits. Work on appropriate assignment.	Common laboratory diagnosis. Common causes of injury and emergencies. Experiences in trauma management. Prevention of injury. Formulate definite research project.	5 weeks in each term
4	Health promotion. Nutrition MCH and paediatrics conduct normal deliveries. Management and administration. project.	Problems facing MCH services. Nutritional problems. Problems in maintaining equipment. Work on research	5 weeks in each term
5	Clinical management in general medicine. Mental health services. Medico-legal aspects of clinical medicine. Work on appropriate research assignment. research project.	Issues in compliance. Drug side effects. Medical practice without technology. Ethical and forensic issues in medical practice. Home visits. Complete	5 weeks in each of two terms

programme in medicine. Because some of these tutors are quite senior and respected members of the Faculty, they have had a negative influence on the implementation of the programme.

In view of the persistent skepticism and criticism from some members of staff, a two day workshop was organised by the Faculty of Medicine to define the possible difficulties with the curriculum and the areas of misunderstanding, as well as to identify practical solutions. The workshop was held between 2-3 January, 1992 at a hotel just outside Kampala. This paper describes the proceedings of the workshop, problems identified and solutions proposed during the workshop.

Organisation of the Workshop

The idea of a workshop was initiated by the Education and Research Unit (ERU) of the Faculty, a unit that supervises and provides guidance for curriculum implementation and works directly under the Dean of the Medical School. Heads of departments were invited to send at least two senior members of staff to represent the views of their department. Thirty four of the ninety members of the teaching staff attended the workshop.

The workshop was set to run for two days, but the actual programme was to be covered in a single day. Participants were divided into two groups, each attending on different days, with 17 members per group. The ERU also invited six other persons from the Ministry of Health and the medical school who had experience of community-oriented education in institutions in other countries, to facilitate discussion at the workshop.

Method of Work

On each of the two days the programme started with presentations, conducted by the six facilitators, to sensitize the participants: :

1. An overview of the challenges facing the new curriculum.
2. Transition from hospital-based to community-oriented training.
3. Global, regional, national and Faculty policy on community-oriented medical training.
4. Community-oriented curriculum: the Nigerian experience.
5. Uganda Ministry of Health policy on community-oriented medical training.
6. Curriculum implementation: practical problems.
7. Child health & development center - Makerere Medical School: Community Experience.

Each presentation lasted about 15-20 minutes and was followed by 5 minutes for questions and clarifications. The participants were then split into three small groups of at least five members for further discussion of specific topics to answer the questions: Why is community-orientation necessary; What are the logistical problems; What can be done to overcome these problems?
The group discussions were given approximately one hour before the groups reconvened for an exhaustive and frank discussion of the ideas generated by the groups. This plenary

discussion was guided by the workshop facilitators and lasted for 2 hours on each day. A number of problems affecting the implementation of the new curriculum were identified, and some possible solutions were suggested.

Problems Identified

The discussion identified two types of problems philosophical objections against the community-oriented curriculum and practical problems for which solutions had to be sought.

Philosophical objections included:

1. Why not leave it to the Department of Public Health?
2. Training a doctor in this way will leave him less suitable for international needs.
3. Doctors produced by this programme will find it difficult to be recognised outside the country.
4. The programme will lower standards.
5. The programme may compromise biomedical knowledge.
6. The old curriculum is already overcrowded, addition of the new programme will only overload the undergraduate course.

Nine practical problems were identified

1. Poor infrastructure. It was acknowledged that the entire social and health system infrastructure had collapsed over the past decade due to political and social unrest in the country. This would adversely affect the implementation of the community-oriented curriculum.

2. Lack of appropriate arrangements for field work. The meeting felt that many logistical requirements for students and staff in the field were not yet in place. Some of these requirements included adequate accommodation, transport, laundry facilities, food, allowances and field equipment.

3. An assured supply of drugs and other consumables. Experience at the health centres had shown that the supply of drugs and other consumable was frequently erratic and unreliable; this would affect field work when essential supplies were not available.

4. Resistance by academics. The academic members of staff are the major implementors of the programme. It was obvious that some colleagues were still questioning the relevance of the new curriculum. Others did not see how their disciplines would operate in the community.

5. Lack of experience in teaching/learning methods. Many participants expressed fear of lack of knowledge of how to teach in the programme and had limited information about the methods available to them.

6. Limited information about the community-oriented curriculum. Inadequate dissemination of information about the community-oriented curriculum and difficulties in interpreting the curriculum were cited as other reasons for misgivings about the curriculum.

7. Timing of the community clerkship. Some participants were concerned that sending the students to the community before they had been exposed to clinical medicine would limit the ability of the students to serve the community.

8. Lack of reference texts and books for the curriculum.

9. Encroaching on the privacy of the community and the risk of overuse or community fatigue.

Solutions Proposed

1. Organise workshop for all Faculty members to ensure full understanding of the curriculum. It was clear that many members of staff were skeptical because they did not understand the curriculum. It was recommended that several meetings be held with individual departments to enable their members to discuss the curriculum in detail.

2. Training of trainers. It was also recommended that the Faculty should embark on training trainers to equip them with the necessary skills for teaching in the clerkships, including the techniques of student assessment in the new curriculum.

3. Put in place all the requirements for field work.

4. Increase community participation in the running of the programme.

5. Promote health centres as the foci of activities, rather than hospitals.

6. Work out a detailed budget for the implementation of the curriculum. The purpose was to define possible sources of funding and ensure the sustainability of the programme.

7. Encourage the Faculty to produce local teaching materials for community-based clerkships.

Conclusions

This workshop provided an opportunity for the academics to share their views on many fundamental issues that affect the smooth implementation of the new community-oriented medical education at Makerere Medical School. The main lesson from the workshop was that most members of staff felt insecure with the new curriculum because they had never had any formal training in how to teach in the community.

An evaluation of the acceptability of the curriculum after the workshop made it clear that many were willing to change their views once they were given training in the teaching skills for community clerckships. It also became clear that there was a need to organise similar workshops to involve as many of the remaining teaching staff as possible to provide an opportunity for better understanding.

Since the workshop the Faculty has embarked on a programme of training for trainers. The Faculty has also organised several focused discussions with various departments to try and resolve some of the philosophical objections.

References

Hamad, B. (1991). Community-oriented medical education: What is it?
Medical Education, 25, 16-22.

Omotara, B.A., Padonu, M.K.O., Bassi, A.P., & Amodu, M.O. (1992). Community-based medical education: The University of Maiduguru experience. *Annals of Community-Oriented Education, Vol. 5*, 41-46. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Padonu, M.K.O. (1987). Report on Song community health project II. *Annals of Borno IV*, 315-320.

Short Intensive Courses for Primary Health Care Leadership in Sudan

Elbagir Ali Elfaki, Ibrahim M. Abdelrahim and Abbas O. Elkarib
University of Gezira
Wad Medani, Sudan

Bill Bower and Susan Nalder
Columbia University
New York, NY, United States of America

Abstract

This paper reports the experience of the Gezira Faculty of Medicine in a short Primary Health Care (PHC) orientation and programme management training course for doctors and other health professionals in the Sudan.

Introduction

Short, intensive courses are a well recognised training method in continuing medical education. In most instances such courses focus on introduction of professionals to theoretical advances in medical sciences or the demonstration of new technical procedures. They are rarely meant to lead to actual mastery of skills or the adoption of new attitudes. However, short, competence-based courses were extensively used by Ministries of Health during the past decade in furthering the objectives of the Primary Health Care (PHC) global movement. Such courses were mostly used in Sudan to train village and mid-level auxiliary health workers in the acquisition of new skills for the delivery of PHC interventions like immunization and home treatment of diarrhoea. However, this strategy was not used on the same scale in the training of doctors and other health professional staff and little is known about its effectiveness in the orientation of these professionals to the PHC tasks or in achieving a positive change in their attitudes.

Rationale

The aversion of doctors to working in rural areas or to non-curative community health activities is a universal problem, and Sudan is no exception. In 1985, 64% of all the doctors in the country were working in the capital and another 27% worked in three out of the remaining regions (Ministry of Health, 1985). This at a time when the most recent country census found that 20% of the population were urban, 11% nomadic and 69% in agricultural communities (Department of Statistics, 1983).

Requests for reprints should be sent to E. Elfaki, Omdurman Islamic University, Faculty of Medicine, P.O. Box 1226, Khartoum, Sudan.

Sudan is among the first countries to adopt a PHC programme, almost two years before the Alma Ata declaration (Ministry of Health, 1975). The country had an extensive network of rural health units which were further extended by the training of thousands of community health workers by the new PHC programme in the late seventies. Despite this apparent good coverage, the health status remained well below expectations; for example, the infant mortality rate was 140/100.000 live births in 1985 (UNICEF, 1985). An evaluation report on the PHC programme documented poor performance of health workers in the peripheral, rural health units in the absence of good logistic and leadership support from higher levels (WHO, 1986).

The Gezira Medical School, through its continued collaboration with the Ministry of Health (MOH), proposed a new policy to link around 170 rural hospitals in the country with their neighbouring village health units (Abdelrahim et al., 1992). These hospitals should then provide technical and logistic support to the village level health workers. The MOH adopted this policy, which among other things, required young doctors in the rural hospitals to undertake expanded responsibilities, including management and administrative tasks.

In order to enable young medical doctors to undertake these new responsibilities, the Faculty of Medicine in Gezira, in collaboration with the Centre for Population and Family Health (CPFH) of Columbia University, New York, designed a three-week training course. It was originally offered only to doctors just before they start their rural residency assignment. It was subsequently made available to all health professionals with PHC duties.

Objectives

The overall objectives of the course may be summarised as follows:

1. Orientate the participants to the PHC strategy, including its rationale, concepts, intervention and the programmes in the Sudan.
2. Acquisition of essential management skills by participants to become effective health team leaders capable of designing sound delivery of PHC services.
3. Introduce participants to the organisation, as well as administrative rules and regulations governing work in rural hospitals and rural health service units.
4. Effect a favourable change of attitude among participants for community health work and PHC.

Content and Methods

The training was designed as a three week full time residential course to create a retreat-like environment where interaction among participants and between participants and tutors would be facilitated. A pre-course tutor training workshop emphasized the need to use adult training principles to achieve maximum participation and relevance of the course to the participants' needs. While continuity of the learning experience was observed in course design, training activities were built around three almost distinct units as set out below.

PHC Concepts, Strategies and Intervention Unit

This unit is covered in six days. It starts with an overview of the global health status and the differences between developing and developed countries. Special emphasis is focused on data correlating the poor health indicators from developing countries to a few well defined problems. The problems were those mostly affecting mothers and children and where simple, effective interventions are available. The parallel health status data from the Sudan is then considered Participants also discuss the reasons behind the failure of the traditional health delivery system to improve the situation.

The PHC definition, its basic concept, and its elements as defined in the Alma Ata Declaration are introduced and discussed. This is followed by presentations of the Expanded Programme on Immunization (EPI), Growth monitoring and nutritional education, home-based treatment of diarrhoeal diseases and safe motherhood through high risk pregnancy referral and birth spacing. The unit includes discussion on community participation, health education, community empowerment and issues related to the attitudes of health workers.

Lecture-discussion sessions, led by people with first hand experience in PHC programmes, are the main instructional method. Small group discussions and presentations of participants' own experiences help to make the unit more participatory. One day is devoted to field work where participants practise the delivery of some important PHC service in neighbouring villages. They report on the experience and the insight gained in the technical and logistic details of the interventions.

Primary Health Care Programme Management

This is by far the most substantial unit and occupies nine days. It introduces participants to basic managerial concepts and simple, related skills. The unit starts with an introduction to a conceptual model for PHC programme management. This is followed by discussion of essential management concepts and the definition of basic principles. Participants are then divided into small working groups of 6-8 members. Each group undertakes a series of exercises to develop a PHC service programme for implementation in the area surrounding a rural hospital. The programmes include the child survival and maternal health interventions discussed during the first week.

The first step in the programme development process is a Needs and Resources Assessment (NRA) exercise in a neighbouring rural community. This introduces participants to the most effective quantitative and qualitative methods for rapid collection of essential information. The information thus collected serves as a realistic base on which subsequent exercises in the process of programme development are built. Groups present their results to a plenary session and subsequently revise their reports.

Participants go through the following NRA activities:

- Analyse NRA data to define the health problem and set order of priority.
- Set objectives for the programme and define criteria for the evaluation of the achievement of the objectives.
- Select appropriate strategies for the achievement of the objectives with available resources.
- Design an implementation with a time schedule for major activities.
- Outline a plan for the training of health workers, particularly those at the village level, to implement programme activities.
- Define a plan for supervising village health workers from the rural hospital.

Orientation to Ministry of Health Rules and Regulations

This unit introduces participants to the organisation and the administrative rules in the Ministry of Health (MOH) that are relevant to their work as leaders of health services in rural areas. Most of the sessions in this unit are tutored by senior administrative personnel from the MOH.

A final exercise in the training programme is a management audit exercise in a rural hospital. Participants visit four rural hospitals to examine management and administrative practices with the use of a check-list. This list includes questions to explore hospital objectives as seen by its personnel, relationship of hospital with neighbouring PHC units and communities, as well as work relationships and administrative procedures within the hospital. Participants are requested to propose feasible interventions to solve the major problems they discover during the exercise.

Evaluation

Evaluation played an important role in the development of the course. The pre-course assessment of the participants included their biographical data, a 15-item, scaled attitude questionnaire, and 20 short answer questions.

Formative evaluation during the course included:

- a rapid feedback questionnaire to assess the participants' degree of satisfaction with individual sessions;
- a daily warm-up (brain storm) session on what had being learnt on the previous day; and
- discussion among the training team to assess the progress made by groups in the working exercises.

Post-course assessment and follow-up evaluation included:

- readministration of the pre-test to assess progress in knowledge and attitudes;
- a questionnaire for the participants to evaluate course content, methods and logistics; and;
- follow-up of participants by one or more training team members 2-4 months after the training course.

Results and Discussion

Tables I and II show the summary of results of the pre- and post-tests from the first course. The significant gain in knowledge remains a consistent finding through all the sixteen courses which were reviewed for this paper. The management unit continued to be the most popular and the area where the most substantial knowledge gain is shown.

Table I. Pre- and post- test results: Knowledge about PHC interventions

PHC Interventions	**Group Knowledge of Programmatic Concern for Effectiveness Score**	
	pre-test (%)	**post-test (%)**
Growth monitoring	53	77
Immunisation (EPI)	58	81
Birth spacing	54	88
High risk pregnancy identification and referral	43	94
Group range of score	1-14	9-15
Group mean (maximum 15)	7.5	13

The rapid feed-back questionnaire led to many changes in each session. The highest score is usually given to sessions which allow maximum participation. In a few instances, sessions with successive poor results were removed from the course.

The questionnaire for quantitative evaluation of attitude change during or after the course proved to be problematical. From the start there were doubts about its validity and reliability. The questionnaire was dropped after a few unconvincing alterations. However, the change in attitude is possibly the greatest achievement in this course, and it is regrettable that no further attempts were made to find an alternative method for its evaluation.

The follow-up field visits were the most valuable of all the evaluation tools and a distinguished feature of the course (Abdelrahim et al., 1988). The above information documented the effectiveness of the training in changing the attitudes of doctors and induced them to start PHC service activities in their areas. Out of 29 doctors visited after the first round of the training, 23 (79.3%) were found to be using recently learned management practices or to have initiated new PHC activities. However, this enthusiasm by young doctors was not matched by support or understanding from their superiors at the regional level. This lack of administrative and management support lead to the frustration of many initiatives that had been started by doctors after leaving the training course. The complicated nature of the process of health service development was revealed to the training team through this early and subsequent follow-up visits. As a result the team became involved in a successful partnership with MOH in issues of rural health reorganisation and policy reform (Abdelrahim, 1990). Another direct result of the follow-up field visits is the improvement and adaptation of the course content and methods to the participants real-life needs.

Table II. Pre- and post- test results: Knowledge of management

Management term	**Group Knowledge of the Concepts Score**	
	pre-test (%)	**post-test (%)**
Community diagnosis	20	62
Programme objectives	13	69
Operational target	1	33
Programme strategies	13	45
Programme evaluation	14	62
Supervision check-list	10	50
Implementation plan	14	50
Logistics planning	10	50
Management information system	17	66
Monitoring	16	51
Community participation	30	65
Group range	5-25	10-30
Group mean (maximum 36)	10	17

Conclusion

The training course has been offered three times a year since 1985, and its sixteenths round was recently concluded successfully. Admission to the course is open to all health professionals with jobs that include PHC tasks, except in the first course when all members were doctors. Priority is now given to participants with organisational support like non-government organisations (NGOs) or special PHC programmes, as these professionals are most likely to make best use of the training. The course also trains participants with key PHC commitments from neighbouring countries.

Some of the important lessons gained from this intensive, short course may here be summarised:

- Short, intensive training programmes based on adult learning methods are effective for introducing young health professionals to community health and PHC tasks.
- A remarkable change of attitude can be achieved through such courses; a necessary step to win these professionals to the cause of PHC and community health.
- Management skills training can be successful as an essential component of PHC training, especially as management is not taught in most undergraduate medical curricula.
- Training of professionals for PHC tasks should be linked to a broader programme of management, development and service reorientation if practical results are to be expected.
- Structured follow-up field visits is a useful tool which offers much support to former participants and facilitates further development of competence-based training programmes.

Acknowledgements

We would like to express our thanks and gratitude to Professor Bashir Hamad, WHO consultant and former dean of the Faculty of Medicine, University of Gezira, for his guidance and constructive support during the preparation of this paper.

References

Abdelrahim, I.M., Nalder, S., Elfaki, B.A., Ghorashi, G.S., & Bower, B. (1988). Improved training in primary health care: Field follow-up essential. *World Health Forum, 9,* 393-398.

Abdelrahim, I.M. (1990). Is there a role for academic institutions in primary health care leadership crisis? The Gezira experience. *Annals of Community-Oriented Education, Vol. 3 (II),* 175-182. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Abdelrahim, I.M., Elfaki, B.A., Ali, M.M.A., Elsayed, A., Nalder, S., & Gorosh, M. (1992). Smaller health areas for a better service. *World Health Forum, 13,* 31-39.

Ministry of Health. (1985). *Annual Statistical Report.* Khartoum, Sudan: Ministry of Health.

Department of Statistics. (1983). *Preliminary Report on the Sudan, National population census.* Khartoum, Sudan: Department of Statistics.

Ministry of Health. (1975). *National Health Plan 1977/78 - 1983/84.* Khartoum, Sudan: Ministry of Health.

UNICEF. (1985). *State of the children in the world.* Oxford, United Kingdom: University Press.

WHO report. (1986). *Evaluation of the primary health care programme in the Sudan.* Alexandria, Egypt: World Health Organization, EMRO.

Annals of Community-Oriented Education
1993, Vol. 6, 27-34

Update in Innovative Health Manpower Production: The School of Health Sciences in Leyte, Philippines

Isabel Tantuico-Koh and Rolando O. Borrinaga
University of the Philippines
Palo, Leyte, the Philippines

Abstract

In producing community-oriented health workers - paramedics, midwives, nurses, nurse-practitioners and physicians, the School of Health Sciences (SHS) of the University of the Philippines in Leyte Province implemented innovative, "counter-culture" ideas for health manpower development that radically depart from traditional training programmes mainly through its democratic admissions procedure, its "step-ladder" curriculum design, and its educational principles that emphasize community related relevance rather than academic excellence. The SHS produces a physician at only 40 per cent of the equivalent cost in "traditional" Philippine medical schools. Its graduates in midwifery, nursing, and medicine have high pass rates of 91, 98.5 and 75 per cent respectively in the national licensure examinations. However, despite the policy of their main employer, the Department of Health, to attain "Health for All by the Year 2000" through primary health care, the SHS graduates find themselves handicapped in using their knowledge and skills in primary health care by incongruent bureaucratic procedures at the field level.

Mission and Objectives

The Institute of Health Sciences (IHS) was established in 1976 by the University of the Philippines College of Medicine (UPCM) in Tacloban, Leyte Province as an experiment in health sciences education to develop a broad range of community-oriented health workers. On May 3, 1989, the SHS formally ceased to be an experiment when it was renamed as the School of Health Sciences (SHS) and assumed a separate, "regular unit" status of the University of the Philippines.

The SHS represents a bold strategy to counteract the twin problems of the "brain drain", which refers to the alarming exodus of more than 50 per cent of Filipino medical professionals to more affluent countries like the United States, and the maldistribution of the available health manpower, where the concentration of physicians in the urban areas left the 70 per cent of the Filipinos in the rural areas without adequate health and medical services. The objectives of the SHS are: 1. to produce a broad range of health workers that will serve the depressed and other underserved communities in Region VIII (the islands of Leyte and Samar); and 2. to design and test programme models for health manpower

---

Requests for reprints should be sent to I. Tantuico-Koh, University of the Philippines, School of Health Sciences Manila, 6501 Palo, Leyte, the Philippines.

development that would be replicable in various parts of the country and, hopefully, in other countries similarly situated as the Philippines.

Strategies for Implementation

To accomplish its objectives, the SHS implemented ideas that radically depart from traditional training programmes. These include highly democratic admissions procedures that delegate most responsibilities for the recruitment of students to the community level, a step-ladder curriculum (Fig. 1) that offers a sequential yet integrated approach to health manpower education (Bonifacio, 1980), and an educational principle that emphasizes community relevance rather than academic excellence. These principles are reinforced with a concept of "service leave" between each stage of professional training, which serves to link the students continually with their home communities. This process, in turn, generates an active partnership with communities for training and for shaping the outlook of SHS students, a responsive entry-exit mechanism to and from the formal curriculum, as well as linkages with other agencies for their cooperation with, and support of SHS operations. Research and development (R & D) are integral components of SHS academic pursuits within community realities.

Detailed discussions about the SHS curriculum and operations are found in an article in the maiden issue of these Annals (Oosterberg, 1988) and in a recent chapter by Borrinaga and Koh (1992).

Academics, Staff, Students and Costs

As of December 1992, the SHS complement consisted of 20 full-time academics and 13 administrative support staff. The teaching staff is complemented by a pool of more than 60 lecturers from the Department of Health (DOH) and from other schools in Leyte.

The first quarter of 1993 opened with an enrollment of 151 students: 10 students in the medical programme, 27 Bachelor of Science in Community Health (BSCH) student, 22 Community Health Nursing (CHN) students, 48 Community Health Work (CHW) students in their fifth and last quarter of studies, and 44 CHW students in their initial quarter of studies.

Table I presents a breakdown of programme and cumulative costs incurred for every student enrolled at SHS. At December 1990 rates, the government spent an equivalent of P107,847 (US $ 4,313) per student to finish the BSCH course. It spent approximately P300,000 (US $ 12,000) to produce a community-oriented medical graduate who is also a licensed nurse and midwife. This amount is only 40 per cent of the P754,000 (US $ 30,160) estimated cost that a student spends to complete the nine-year medical course in other, "traditional" Philippine medical schools and colleges.
For the year 1990, the SHS had a budget of P6,146,140 (US $ 245,846). For 1992, the SHS had a budget of P6,814,850

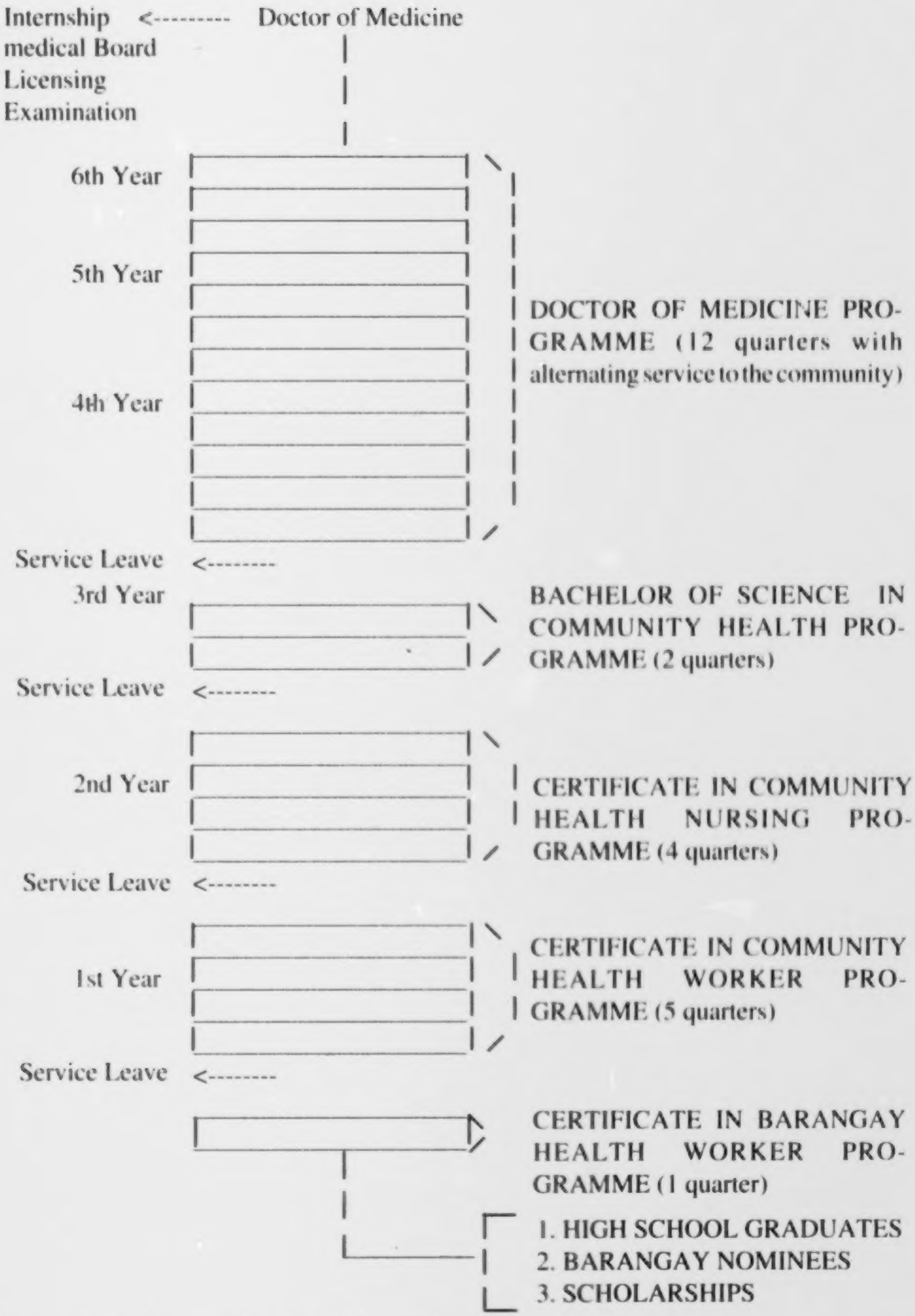

Internship
medical Board
Licensing
Examination
Doctor of Medicine
6th Year
5th Year
4th Year
DOCTOR OF MEDICINE PROGRAMME (12 quarters with alternating service to the community)
Service Leave
3rd Year
BACHELOR OF SCIENCE IN COMMUNITY HEALTH PROGRAMME (2 quarters)
Service Leave
2nd Year
CERTIFICATE IN COMMUNITY HEALTH NURSING PROGRAMME (4 quarters)
Service Leave
1st Year
CERTIFICATE IN COMMUNITY HEALTH WORKER PROGRAMME (5 quarters)
Service Leave
CERTIFICATE IN BARANGAY HEALTH WORKER PROGRAMME (1 quarter)
1. HIGH SCHOOL GRADUATES
2. BARANGAY NOMINEES
3. SCHOLARSHIPS

Figure 1. The step-ladder curriculum of the school of health sciences

(US $ 272,594). Each of these annual budgets is much less than the US $ 330,000 daily payment allocations for the interest alone of the US $ 2.1-Billion foreign loan for the idle, obsolete, and controversial Bataan Nuclear Power Plant (BNPP) near Manila.

The Outcome

As of June 1992, 963 students from 15 annual batches (some 64 per year) had enrolled at SHS. Nine hundred and twelve (912) had qualified as Barangay Health Workers (BHW, or paramedics), 694 as Community Health Workers (midwives), 335 as Community Health Nurses, 210 as Nurse-Practitioners with B.S. degrees in Community Health, and 37 as physicians (MD).

Of the CHW graduates, 632 or 91 per cent had passed the licensure examination for midwives; and of the CHN graduates, 300 or 89.5 per cent had passed the licensure examination for nurses as of December 1992. These gross passing rates of the SHS graduates are gratifyingly high compared with the 60 per cent average national passing rates for the two national licensing examinations over the years. Of the M.D. graduates (excluding our lone foreign graduate), 27 or 75 per cent had passed the licensure examination for physicians. This gross passing rate for our medical graduates is better than that of many of the 15 other medical schools established after SHS in 1976, some of which had fewer than 50 per cent licensure passes among their initial batches of graduates.

Thus, the SHS graduates have not only overcome their handicap of rural secondary or high-school education, they have also outperformed their peers from traditional schools in nationally-administered academic tests.

However, the above statistics merely reflect the academic capabilities of SHS graduates from the viewpoint of the "traditional" professional regulatory boards in the Philippines. There is as yet no standard test to determine the community-related capabilities of SHS graduates, which form a significant part of their training and in which they are unique in this country.

Table II presents the distribution of SHS graduates by highest programme level completed and by region of origin as of June 1992. "None" refers to those students who had been enrolled but dropped out immediately or could not complete the BHW programme. The figures under BHW refer to students who completed only the BHW programme, but for some reasons were not promoted to the next level. A CHW graduate had also completed the BHW programme, but had not been promoted beyond the CHW level. A BSCH graduate had completed the three lower programmes, while the MD graduate had passed through all the lower programmes, including the BSCH level.

Two graduates of SHS can be considered as "experimental" exceptions. One graduate, a former public health nurse, enrolled directly in the BSCH programme and proceeded to the MD programme. She is now a licensed physician practicing in her home province in

Table I. Programme and cost of studies for individual students (as of December 1990)

Bugetary items	BHW (1 quarter)	CHW (5 quarters)	CHN (4 quarters)	BSCH (2 quarters)	MD (5 years)
Living subsidy	P 3,000	P 15,000	P 12,000	P 6,000	P 60,000
Book allowance	250	1,250	1,000	500	5,000
Transport expenses	26	1,680	582	424	1,200
Personnel services	4,752	21,934	12,930	7,157	94,037
Maint. & operating expenses	1,102	8,417	7,643	2,200	31,020
TOTAL PER PRO-GRAMME (In Pesos)	P 9,130	P 48,281	P 34,155	P 16,281	P 191,257
(In US $ at P25 / $ 1.00)	$ 365	$ 1,931	$ 1,366	$ 651	$ 7,650
CUMULATIVE TOTAL (In Pesos)	-	57,411	91,566	107,847	299,104
(In US $)	-	$ 2,296	$ 3,663	$ 4,314	$ 11,964

BHW = Barangay (Village) Health Workers
CHW = Community Health Workers
CHN = Community Health Nurses
BScH = Bachelor of Science in Community Health
MD = Medical Doctor

Mindanao. The other graduate is a native of Bangladesh, who passed through all the programme levels and was graduated with an MD degree. He is back in Bangladesh serving the health development needs in his home village. He also lectures in community medicine at the Institute of Applied Health Sciences (IAHS) in Dhaka.

Employment and Field Performance

The Department of Health (DOH) employs many graduates of the SHS in serving a population of 3.1 million (1990 census) living in six provinces of Region VIII. It is estimated that some 35 per cent of the government public health nurses assigned to the 161 Rural Health Units (RHU) in the region are CHN or BSCH graduates of SHS. A number of CHN or BSCH graduates are also employed by the DOH as staff nurses at different district hospitals or as district nurse supervisors responsible for overseeing public health activities at field level (Lepreau et at., 1990).

Our estimates also show that about 20 per cent of the rural health midwives assigned to the 579 different Barangay Health Stations (village health centres) across the region are CHW graduates of SHS.

Almost all the 27 licensed MD graduates of SHS work in their region, province, hospital district or town of origin. Twenty (74 per cent) work in Region VIII, mostly as municipal health officers or as resident physicians of different district hospitals. Eleven (42 per cent) work on Samar Island, redressing the dearth of medical practitioners there, where many of its 72 towns do not have municipal health officers (Anon., 1992).

Discussion

We estimate that at least 75 per cent of our graduates are based in rural and underserved communities, and that 95 per cent of them are still in the country. The few graduates who, for economic reasons, now work mainly as nurses in several Arab countries (about 25) or in the United States (about 9 or 10) serve to underscore the reality that economic plight is at the root of the country's rural health problems. Indeed, addressing the country's "western-orientated" medical and health sciences curricula is just one, although crucial, part of the solution to these problems.

Recent studies conducted by SHS academics have provided valuable lessons and insights of the field performance of SHS graduates employed by the DOH. The general impression is that the existing, centrally-determined and vertical programme-orientated health care delivery procedures of the DOH have handicapped SHS graduates in delivering effective primary health care at the community level. Though they possess high "rural bias", preference for rural work, our physician graduates have been hampered in performing their roles as community developers, because of the lack of expectation that they would use this skill and consequent lack of opportunity. The people prefer their curative skills as physicians.

Table II. Distribution of graduates by highest programme level completed and by region of origin (as of June, 1992)

	Administrative Region	Highest Programme Level Completed						
		None	BHW	CHW	CHN	BSCH	MD	Total
1.	Region I	-	9	6	3	2	-	20
2.	Region II	-	14	5	-	4	-	23
3.	Region III	2	6	1	-	-	-	9
4.	Region IV	-	4	8	-	6	-	18
5.	Region V	-	6	4	1	1	1	13
6.	Region VI	1	3	6	2	1	1	14
7.	Region VII	1	3	4	2	-	-	10
8.	Region VIII	37	135	287	105	142	28	734
9.	Region IX	1	8	15	3	6	-	33
10	Region X	4	18	13	7	6	3	51
11.	Region XI	1	4	2	3	3	2	15
12.	Region XII	4	6	9	1	1	1	22
13.	Bangladesh	-	-	-	-	-	1	1
Total		51	216	360	127	172	37	963
Geographical Region:								
Luzon Regions (Regions I - V)		2	39	24	4	13	1	83
Visayas Regions (Regions VI - VIII)		39	141	297	109	143	29	758
Mindanao Regions (Regions IX - XII)		10	36	39	14	16	6	121
Bangladesh		-	-	-	-	-	1	1

The CHN and BSCH graduates who work as public health nurses are hampered by having to spend considerable parts of their time in fulfilling official reporting and monitoring requirements at the expense of their community-related functions.

As for the CHW graduates, who work as rural health midwives, we cite an extreme example. A "best performing" midwife Graduate of SHS, as ascertained by the findings of an United Nations Fund for Population Activities (UNFPA) community survey (Borrinaga, 1989), who has close rapport with the residents of her nine villages, including her home village, was reprimanded several times by her supervisors for "low performance" against the existing vertical-programme and centrally-determined performance targets of the DOH during the period covered by the survey. This was a documented case of a health worker who was actually "punished" for doing her job so well.

There remains a great deal to be learned from the experience of our graduates and the frustration of trying to integrate the content of their training with the existing administrative procedures of the DOH, which ironically seem to hamper the pursuit of the official policy to attain the goal of "Health for All by the Year 2000" through Primary Health Care. Nevertheless, it consôles us that our graduates have somehow persevered, despite the incongruent bureaucratic demands and the constraints imposed on them by distance and isolation, and by the difficult socio-economic realities which face them in their communities.

References

Anon (1992). The UP-SHS story. *Pok'Aw, 1 (4), 8-13.*

Bonifacio, A.F. (1980). University of the Philippines College of Medicine, the Philippines: The Institute of Health Sciences, Tacloban - search for a model. In: F.M. Katz, & T. Fülöp (Eds.). *Personnel for health care: Case studies of educational programmes, Vol. 2.* Geneva, Switzerland: World Health Organization.

Borrinaga, R.O. (1989). The performance of two institutes of health sciences graduates as government midwives in their home communities in Leyte, Philippines. IC*MR Annals, 9 & 10,* 13-31 (Book 1).

Borrinaga, R.O., & Koh, I.T. (1992). Training appropriate health workers: The institute of health sciences in the Philippines. In: J. Rohde, M. Chatterjee, & D. Morley (Eds.). *Reaching health for all.* Oxford, United Kingdom: Oxford University Press.

Lepreau, F.J., Koh, I.T., & Olds, R. (1990). Community-based medical education in the Philippines. *Journal of the American Medical Association, 263 (12),* 1624-1625.

Oosterberg, E. (1988). Community-based medical education in the Philippines: The institute of health sciences, Leyte. *Annals of Community-Oriented Education, Vol. 1,* 43-53. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Annals of Community-Oriented Education
1993, Vol. 6, 35-42

Community Orientation: Ups and Downs at Newcastle, N.S.W.

John D. Hamilton
The University of Newcastle
New South Wales, Australia

Abstract

This paper summarizes the history and philosophy and curriculum of the Newcastle Faculty of Medicine. The first part has been set out in greater detail elsewhere (Hamilton, 1992). A turbulent period followed which highlighted hazards that might follow from a strong link with the health services. However, there was a happy ending - a very positive accreditation report from the Australian Medical Council (Hamilton, 1993). The present account draws all this together, highlighting particularly the issues of community orientation, some of the ups and some of the downs.

A Community and Population Oriented Medical School

A medical school was recommended for Newcastle by a Commonwealth Government Commission headed by Professor Karmel (1973). A new medical school would have opportunities for innovation that would elude established schools. At Newcastle in the Hunter Valley, a non metropolitan centre of a diverse industrial and agricultural region, the school should build firm links to the community. This would be a stimulus to develop an academic basis to support a community orientation for its curriculum:

> *"The time now appears right for a significant development of Departments of Community Medicine which will demonstrate the problems of community health care in practice. In addition to helping to stimulate interest in general practice, such a philosophy of training will also assist those students destined to become specialists or medical scientists, giving them a greater appreciation of community problems and needs, so that they will practise their own vocation with greater understanding. If Departments of Community Medicine embrace multiple responsibilities: General Practice, Epidemiology, Preventive and Occupational Medicine, a comprehensive intellectual discipline can be established"* (Karmel, 1973).

The Early Days

Professor David Maddison was appointed as Foundation Dean. As Dean of Sydney he had been frustrated in curriculum reform by, as he saw it, entrenched interests of established departments. He would be supported by a new Vice-Chancellor, Professor Don George, who had declared a willingness to support innovation.

Requests for reprints should be sent to J. Hamilton, University of Newcastle, Faculty of Medicine, N.S.W. 2308, Australia.

The Dean commenced duty in January 1975, and students entered in February 1978. The three intervening years saw the recruitment of foundation staff, and the publication of Working Papers (Faculty of Medicine, 1976, 1977). The latter defined the principles of the curriculum, student selection and administration which was centralised to support a fully integrated curriculum (Neame, 1981; Clarke, 1984). Several Departments of the University felt cheated of a chance to teach their disciplines and to benefit from wider student contact, resources, and access to medicine. A disadvantage of a fully self-sufficient Faculty is a sense of isolation.

Maddison matured his ideas by visits to several Schools around the world; some were in time, together with Newcastle, the foundation members of the Network of Community-Oriented Educational Instutions for Health Sciences.

The Working Papers have stood the test of time, as has student selection with its emphasis on personal qualities (Powis et al., 1991). The 45 educational objectives, set out in 1976, have remained the foundation of curriculum and assessment. A curriculum review in 1983 resulted in a reorganisation of the objectives into five Domains of learning:
Domain 1: Professional Skills
Domain 2: Critical Reasoning
Domain 3: Identification, Prevention and Management of Illness
Domain 4: Population Medicine
Domain 5: Self-Directed Learning

Detailed accounts of the Faculty's methods of problem-based learning, assessment and the structure of the curriculum have been published (Faculty of Medicine, 1980, 1983, 1986). This paper will deal specifically with the community orientation of the Faculty, together with its curriculum.

Educational Objectives

Although the Domain of Population Medicine is obviously a major contributor to community orientation, the objectives for all the Domains reflect that orientation. Here are three such objectives:
"- the graduate will have demonstrated a positive, consistent and informed attitude towards the prevention of illness and the maintenance of health...;
- the graduate will have demonstrated his awareness that major changes in individual and community health are likely to depend as much or more on change in the behaviour of people as on the manipulation of the physical environment;
- *the graduate will manifest a positive attitude towards the concept of the physician as an educator, for example of his patients with regard to their illness, of the public in matters of health...and will show an appropriate level of ability and confidence in this role"* (Clarke et al., 1981).

Studies of a Community

For a community orientation it is crucial for the students to experience the community. A Faculty Working Paper put it as follows:

> *"...provide the students with an opportunity, in their groups of seven, to move out into the community, each student group having its own predetermined community locality in which students can work. The intention...would be to enable students to begin to develop skills in approaching the community, talking to people within it, assembling information with respect to its structure, understanding something of the community and generally developing insights which are fundamental to a sociological and epidemiological understanding of the way in which the community functions."*

Whilst there were precedents for this in developing countries, it was new to Australia, and few tutors had either experience or an academic background in sociology to assist the students to develop an appropriate frame of reference. Experience was, therefore, highly dependent not only on the setting, but also upon the tutor, and, of course, the initiative of the students. Student reaction was not positive. In time the comprehensive studies undertaken within the community gave way to studies that were undoubtedly community-oriented but were more disease or symptom-based. Reflecting in their later years and from the perspective of active practice, some graduates regretted that change. Some academics felt that the element that led to social intervention (e.g. safe roads, children's playgrounds, assistance for single mothers) should have been a more prominent part of the community experience.

The Discipline of Community Medicine at Newcastle

Maddison had seriously considered not setting up a distinct Discipline but rather to make community medicine the responsibility of the Faculty as a whole. In the end he did follow the Karmel Report, outlined above, and established a Discipline of Community Medicine. At Newcastle it has developed three independent themes: 1. population Medicine: the population based aspect of Community Medicine, dealing with the health of large communities; 2. the medical care of individuals in the community: occurring through general practice, other community services and occupational medicine; and 3. clinical Epidemiology: the application of the methods and perspectives of classical epidemiology, in the clinical setting. It deals with the evaluation of effectiveness of interventions, assessment of prognosis, the interpretation of clinical and laboratory tests, and the investigation of aetiology (Dickinson et al., 1985).
These themes are woven into much of the curriculum, especially Population Medicine, Critical Reasoning and experience in general practice.

In time the Discipline gave birth to two new disciplines, Environmental and Occupational Health, and General Practice, each led by a professor. Its remaining function, clinical epidemiology and biostatistics (linked to the Department of Mathematics), has underpinned the expanding Centre for Clinical Epidemiology and Biostatistics, and the Discipline has

been renamed Community Medicine and Clinical Epidemiology.
The Centre provides postgraduate education and training in population-based research, linked to a range of specialties (Heller, 1991). It is now a major contributor to cooperative research with the Hunter Area Health Service, consonant with the recent research initiatives of the Network.

Other Academic Disciplines and Population Health

All Disciplines, one way or another, contribute to a population perspective to teaching and research, each with a community orientation. Four examples will illustrate the direction of research and links to the health service.

1. Behavioural Science (in Relation to Medicine). This Discipline has a widening scope of population-based studies in behaviour as it relates to health risk (smoking, diet, safety harness, exercise, drug and alcohol) and is a WHO Collaborating Centre for Health Behaviour Research. It has now taken responsibility for all health promotion programmes of the Hunter Area Health Service including those in women's health, drug and alcohol, cancer, and injury prevention. This initiative has established the Hunter Centre for Health Advancement in which academic and health service staff form a single team. The extensive research experience of the Discipline supports and evaluates health service initiatives, and health service staff undertake academic training, particularly in health promotion, and themselves establish evaluative research. This initiative is unique in Australia and possibly globally.

2. Environmental and Occupational Health. This Discipline has expanded its scope from studies of the workplace and occupational medicine to environmental toxicology and occupational health and safety for which training programmes are expanding. It is central to the new Newcastle Environmental Toxicology Research Unit which brings together not only members of Faculty disciplines, but also members from Chemistry and Geography from the rest of the University. The Director of the Hunter Public Health Unit is a member of both the Discipline and the Research Unit.

3. Clinical Pharmacology. This Discipline has taken responsibility for an extensive Clinical Toxicology Service, including the care of patients with drug overdose. A major research thrust has been in pharmacoepidemiology. This gives an impetus to the international INCLEN initiative and provides major policy assistance to the Commonwealth Government of Australia on the evaluation and monitoring of the use, efficacy and side effects of pharmaceuticals as used in the population at large.

4. Paediatrics. The Discipline has only two full time academic members. (The Faculty is small and incidentally thereby provides a realistic model for other schools with limited resources.) Even so, the Discipline has led the expansion of paediatric services in the Hunter Valley, including tertiary services. It has established research in community nutrition as it relates to long range risk factors for heart disease, and in asthma. Its population-based studies of epidemiology and environmental risk factors link also to patient support groups, school educators and pharmacists, both locally and as part of national initiatives. The linkages to patient support groups have been particularly valuable as they lead to empowered patients and parents, a network of educational events, and a study of educational packages in schools.

The Discipline has lately been expanded by the addition of the Director of the Child and Family Health Service, sought and appointed as a full professorial chair within the Faculty. A number of such conjoint chairs provide simultaneous service and academic leadership in key service areas. Others are in Palliative Care, Anaesthesia and Intensive Care, Reproductive Medicine, and Geriatrics and Gerontology.

How Will Newcastle Sustain a Community Orientation?

Of all the Faculty's curricular initiatives this is the most fragile, at least because the first landing point for graduates is **not** the community, but the internship and the emergency room.

While the rigour of the curriculum has been strengthened through new academic developments, the depth of direct experience in population medicine is constrained. The Australian Medical Council concurred with that appraisal in its accreditation in 1992 (Australian Medical Council, 1992b; Hamilton, 1993). The Faculty had already commenced planning for an additional optional year of community-based experience as a Bachelor of Medical Science by Coursework. The experience would be in a range of clinical services and other activities in which we provide academic and service leadership (public health, health promotion, environmental health, palliative care, Aboriginal health, general practice). The experience would also benefit from strong links with other University Departments - Law, Social Work, and Sociology. A strong academic underpinning would be provided in clinical epidemiology, biostatistics, health social sciences, and health economics, much of it drawn from the Centre for Clinical Epidemiology and Biostatistics.

In parallel, a matching set of postgraduate vocational courses are being planned. It is of crucial importance that our conjoint chairs take a major role here; they have responsibility for defining the future needs of services and the training of health personnel. In time the Faculty hopes to build links across the health professions through contacts with our co-Faculties of Nursing and Health Sciences. However, as found elsewhere, concerns for professional independence have made progress unexpectedly slow.

Research in the community. The Faculty's research must continue to respond to community needs. Examples have been given above.

Dialogue with the community. This is difficult outside the narrow scope of the health services, and there are only so many hours in the day. However, the expansion of population-based research has led to community consultation on issues of environmental protection, public health, health promotion, and specific diseases such as asthma. Studies in epidemiology and health promotion have led to structured community interventions. Psychiatry has taken a lead in evaluating the impact of the 1989 earthquake and has now set up an Institute of Mental Health to run educational programmes for lay workers, clergy, school teachers, and other carers.

All of these provide for informed discussion. One of the best outcomes of being involved in population-based research is the Faculty's capacity to inform and educate the public using information based on studies of their own circumstance. The Hunter Centre for Health Advancement is currently developing health targets through iterative discussion with community groups, informed by epidemiological data. Discussion is opening on ethical issues through hospital ethics committees for which the Faculty provides strong academic support. Without an academic dimension in these consultations, there would be every risk that they would deteriorate to uninformed exchange of opinion and aspiration.

Involvement in the health services. This is essential, and we have, in some views, taken upon ourselves too much responsibility. We certainly got heavily battered in a budget crisis in 1991, when the Area Health Board was dismissed by the Minister, and budget reduction held back a number of promising initiatives. The Australian Medical Council (AMC) was reassured to find that relations with the Area Health Service had restabilised. However, things are never plain sailing; the Minister for Health has appointed a new Area Health Board with the Vice-Chancellor - which is good, but without the Dean - which is nonsensical. Ironically this harps back to 1975 when David Maddison had to fight for a seat on the Board of the then main teaching hospital which appeared to resent a new influence on its future.

Programme Evaluation. It is essential to evaluate the outcome of the curriculum. The Faculty has undertaken more extensive studies of graduate performance than others in Australia, and this has been recognised by the AMC. Unfortunately, because the internship is the most available setting to undertake those evaluations, many aspects of the community orientation are not studied. So we are now embarking upon a study of the impact of our community and population orientation on patterns of practice - not easy, but likely to be greatly helped by the newly created Division of General Practice and plans for continuing education in general practice. The Faculty will make a particular commitment to these aspects of its activities.

Alert to unmet needs. The community has many unmet needs which a Faculty needs to sense. The appointment of conjoint chairs is a valuable move to help gain better insight into issues - in the care of the aged, the community care of the mentally ill, women's health, Aboriginal health, the health of migrants and ethnic communities, and the health of remote and rural communities for which the Faculty is proposing a national centre. Dialogue with the community will identify other needs as will cooperation with the co-Faculties of Nursing and Health Sciences. The latter, together with Law, Social Work and Sociology, should help to extend further the University's perspective of health beyond the medical boundary.

The Australian Medical Council. Innovation and experiment is often constrained by the perceived conservatism of the national accrediting body, here the Australian Medical Council. The author was the Foundation Chairman of the Accreditation Committee, and its history has been described (Hamilton et al., 1990; Hamilton, 1993). These concerns of conservatism have no foundation; notable in the newly published guidelines (Australian Medical Council, 1992a) are the positive encouragement to innovation and a priority for population health and community medicine. From the outset the accreditation team has always contained an expert in community medicine, and a separate chapter is devoted to it in each report. For example, amongst its requirements is the following:

> *"It is important that medical schools place appropriate emphasis on a population health approach to the care of communities and they should have processes in place to ensure that students have adequate experience of community facilities available for meeting specific needs for health education and disease prevention. The specific health needs of both men and women, the needs of those with chronic disabilities, and those from particularly socio-economically disadvantaged cultural groups including Australian Aborigines and Torres Strait Islanders, and certain migrant groups must be addressed."*

The AMC gave to Newcastle a thorough endorsement of its innovations (Hamilton, 1993). Yet, salutary to us, it cautioned that we had reduced students' direct experience within the community. The Accreditation Committee and the close consultation of senior academics during accreditation visits provides a framework for exchange of ideas and an impetus for curriculum reform. Community medicine, population health, communication skills and insights into social and environmental aspects of health have all gained stature from the AMC. Similarly, in New South Wales a conference of Deans and the Department of Health have identified the need for a broader community orientation and to extend teaching out of the main teaching hospitals and into rural and community settings. With support like that, Australia is in a strong position to make bold initiatives for the benefit of the community at large.

References

Australian Medical Council. (1992a). *The assessment and accreditation of medical schools by the Australian Medical Council.* Canberra, Australia: Australian Medical Council.

Australian Medical Council. (1992b). *Report of the accreditation of the Faculty of Medicine, University of Newcastle.* Canberra, Australia: Australian Medical Council.

Clarke, R.M., Leeder, S.R., & Maddison, D.C. (1981). Health orientation in medical education, Australia. *Preventive Medicine, 10,* 719-725.

Clarke, R.M. (1984). Organizing an institution to deliver educational programmes designed to achieve capability. *Journal of Programmed Learning and Educational Technology, 21,* 301-306.

Dickinson, J.A., Heller, R.F., Hensley, M.J., Kelman, R., Leeder, S.R., Lloyd, D., & Reid, A.L.A. (1985).(unpublished). *Community medicine at Newcastle in the next five years.* Newcastle, Australia: University of Newcastle.

Faculty of Medicine. (1976, 1977). *Working papers.* Newcastle, Australia: University of Newcastle.

Faculty of Medicine. (1980, 1983, 1986). *Papers published on the undergraduate programme: Volumes 1, 2, 3.* Newcastle, Australia: University of Newcastle.

Hamilton, J.D. & Vandewerdt, J.M. (1990). The accreditation of undergraduate medical education in Australia. *The Medical Journal of Australia, 153,* 541-545.

Hamilton, J.D. (1992). A community and population-oriented medical school: Newcastle Australia. In: K.L. White, & J.E. Connelly (Eds.) *The medical school's mission and the population's health.* New York, NY: Springer Verlag.

Hamilton, J.D. (1993). Medical school accreditation: The Australian experience. *Annals of Community-Oriented Education, Vol. 6,* 231-242. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Heller, R. (1991). Centre for clinical epidemiology and biostatistics. *Annals of Community-Oriented Education, Vol. 4,* 99-102. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Karmel, P. (1973). (Chairman). *Expansion of medical education.* Report of the Committee on Medical Schools to the Australian Universities Commission. Canberra, Australia: Australian Government Publishing Service.

Neame, R.L.B. (1981). (Ed.). *Task force on organisational structures.* Network of Community-Oriented Educational Institutions for Health Sciences. Newcastle, Australia: University of Newcastle.

Powis, D.A., Neame, R.L.B., Bristow, T., & Murphy, L.B. (1988). The objective structured interview for medical student selection. *British Medical Journal, 296,* 765-768.

Annals of Community-Oriented Education
1993, Vol. 6, 43-52

Community-Based Medical Education and Curriculum Change: The Field Attachment Programme of the School of Medicine of the University of Zimbabwe

Charles H. Todd and Catherine M.R. Tsikirayi
University of Zimbabwe
Harare, Zimbabwe

Abstract

This paper reviews the rationale, history, goals and implementation of the field attachment programme of the University of Zimbabwe Medical School (UZMS). The field attachments were developed in the context of curriculum reform which occurred in the wake of national Independence. The main aim of the new curriculum was to train a community-oriented doctor for the new Zimbabwe. Community-based education was seen as a key element in the new educational strategy. The main success of the programme has been its positive impact on staff and students. Problems include logistical ones, now largely overcome, and the lack of integration of community attachments into the curriculum as a whole. Field attachments, which have a long tradition in Zimbabwe, have evolved into a significant community-based medical education programme. However, the curriculum as a whole has yet to become truly community-oriented.

Introduction

With the attainment of Independence by Zimbabwe in 1980, the "winds of change" reached the University of Zimbabwe Medical School (UZMS). There was a desire to bring the undergraduate curriculum into line with the "needs of Zimbabwe as an African state" and to align it closer to world trends in medical education. In this context, the existing curriculum was recognised as having a number of identifiable failings. Graduating doctors were found to be ill-prepared to meet the health needs of the majority of the population. Most turned to sophisticated, urban-based, private medical practice; they "lacked an understanding of the ... philosophy and strategy of primary health care", and showed inappropriate attitudes and poor communication skills (Anon., 1985).

The new undergraduate medical curriculum was developed, with the aim of rectifying the identified shortcomings, to train "a physician who is able to provide comprehensive health care in his/her capacity as a District Medical Officer in Zimbabwe". The spirit of the new curriculum reflected a desire for a different kind of doctor, who would be fit for the newly independent Zimbabwe and who could play a leading role in achieving "Health For All".

Requests for reprints should be sent to C. Todd, University of Zimbabwe, School of Medicine, Department of Community Medicine, P.O. Box A 178, Avondale, Harare, Zimbabwe.

Specifically, he or she should be able to competently manage the major health problems in Zimbabwe, provide integrated health care oriented to the needs of communities, recognise his or her limitations, educate and counsel others, and carry out relevant research (Anon., 1985).

In order to meet these objectives, a number of major changes in educational strategy were proposed: 1. integration, both horizontal and vertical, with the development of a coordinated modular format; an emphasis on problem-based learning and communication skills, and a holistic concept of health and disease; 2. early people and patient contact, including the implementation of a behavioural science course; and 3. expansion of field attachments, which was regarded as crucial for the development of an understanding of the socioeconomic context of disease and the variety of disciplines which influence health.

On paper, the educational strategy of the new Zimbabwe medical curriculum therefore, reflected an intention not just to have community-based activities but a truly community-oriented curriculum (Nooman, 1986). It mirrored many of the current, worldwide trends in curriculum reform (WFME, 1988) and elucidated in the SPICES model of curriculum design (Harden et al., 1984). However, the reality of the new curriculum was quite different from what was planned.

Implementation across the board for all new entrants from 1987 took place in an established medical school. Many of the academic staff saw nothing wrong with the old curriculum and did not agree with the need for change. This paper explores the implementation of the programme of "Field Attachments" and their relation to the new curriculum as a whole.

History of Field Attachments in the Medical School

During the late 1950s, the planning committee for the establishment of a School of Medicine of the University of Rhodesia and Nyasaland recognised the need for "a bias in favour of epidemiological and environmental studies" and for a curriculum which placed as much emphasis on the social as on the purely organic aspects of health and disease. The establishment of a "village family scheme" whereby students were attached to African families in the rural areas was recommended (Anon., 1958; Anon., 1959).

By the time of the first intake into the new medical school in 1963, there had been considerable changes in the political climate from the days of the Federation, which had collapsed with the achievement of majority rule in Zambia and Malawi. In the former Southern Rhodesia there was a settler backlash against the liberal ideas of "partnership" between the races, which led to the unilateral declaration of Independence (UDI) in 1965.

Despite this, the Faculty of Medicine set up a "District Project" aimed at giving students an overall picture of the disease pattern in the rural areas, to give all departments of the medical school access to a rural community and to promote preventive medicine. In collaboration with the Ministry of Health a site was chosen in Wedza (150 km from Harare) at a mission hospital (Mackintosh et al., 1969).

From 1968, groups of students rotated through the district project for 4 weeks during the final year, under the supervision of a University appointed medical officer. Emphasis was placed on the development of a holistic view of health and disease, and on a small research project. In addition, students had the opportunity to be attached to a district hospital for two weeks during their community medicine rotation. In 1972 the district project moved to a purpose built site at Howard Mission Hospital, closer to Harare. However, the liberation war, during which people in the area were herded into "protected villages", soon made conditions impossible and all rural activities were suspended.

After Independence in 1980 the "Field Project", as it had come to be known, was reestablished at Howard with essentially the same format as 12 years before. During the early 1980s the Department of Paediatrics also developed a two week countrywide attachment to rural hospitals, and the Community Medicine rotation to rural hospitals was restarted to replace attachment to urban family practitioners.

The UZMS, therefore, had a long tradition of at least some community-based teaching, and the experience undoubtedly influenced and strengthened the development of the field attachment programme of the new curriculum.

Goals and Objectives

The goals of the field attachments of the new curriculum were developed in the light of the overall aim of training a physician capable of providing comprehensive health care as a district medical officer.

"The intention of the field attachments is to give students an in-depth critical view of: - where and how the people of ZImbabwe live and get sick; - what the perceived and actual heath needs are; - what health care and health-related facilities are available; and - how these facilities are organised at different levels to meet the health needs."

"We expect that, as a result of these experiences, the graduating students will be able to: - identify the main health problems in Zimbabwe; - provide competent, relevant and integrated health care at district level; - plan, organise and teach health care appropriate to the needs of the various communities; and - find the provision of community-oriented health care not only challenging but also satisfying" (Anon., 1985).

A comprehensive list of specific objectives was developed which placed emphasis on the development of a community diagnosis, the carrying out of small scale surveys, understanding community perceptions and beliefs, evaluation of health services, and clinical medicine in the district hospital setting. No specific element of providing service to the community was mentioned.

Strategy: What We Set Out To Do

The plan for the field attachments envisaged students spending at least one month in the field, mostly in rural areas, during each year of study. Students would go out in groups of ten or more during the preclinical years, but perhaps in smaller groups in the clinical years. The new curriculum document was inconsistent on this point. Attachments would take place at a specified time in each year of study in a coordinated programme. Faculty members would accompany students and at the same time give assistance to local medical staff, who would also have responsibility for supervision. Content emphasis for each attachment reflected the subjects that students were currently studying, developing from an understanding of basic rural organisation and problems in the first two years, through epidemiology of disease and clinical medicine in the rural areas in the third year, to rural maternal and child health care in the fourth and overall district hospital organisation and patient management in the final year (Table I). Guidelines for each student were developed for each attachment. These are revised from time to time.

A number of logistical requirements had to be met, in particular the need for adequate accommodation and transport. In conjunction with the Ministry of Health, it was planned that ten hostels for eight students each would be constructed at government district hospitals, and that the Ministry would be provided with funds to purchase suitable vehicles for the programme.

The field attachments were to be a Faculty, not a departmental responsibility, and the need for a special administrative unit was recognised. New academic staff posts in many departments of the Medical School, as well as a post for an administrator were created. Special funds were made available by the University. Subsequently, the lecturer-in-charge of the Howard Hospital Field Project moved to Harare as overall coordinator of the academic aspects of the programme.

Implementation: What Actually Happened

The new curriculum was implemented with the class of 1987, which graduated in 1991. Field attachments were implemented more or less as planned, with each class of students going out *en masse* at the same time. Students are in the field in groups of 8-10 in the first two years and reside in purpose built hostels. Supervisors, drawn from any of the departments of the medical school, are continuously present. At this time, activities are largely community-based with students performing surveys and making observations in various settings.

Table I. Organisation of field attachments by year of study

Year	Timing[1] (duration)	Size of groups [2]	Focal point	Content Emphasis	Methods
1st[3]	Dec. (3 weeks)	7-10	Community	Understanding where, how and why people live and get sick: communal areas	Questionnaire surveys, observation, group discussions
2nd	March or Sept. (3 weeks)	7-10	Community	Similar to 1st year: large scale commercial farms, mines and small towns	Similar to 1st year: emphasis on comparisons
3rd	Aug./Sep. (3 weeks)	2-4	District Hospital	Epidemiology of important adult diseases. Management of common medical and surgical problems	Review of available data Observation Review of cases
4th	Oct.[4] (4 weeks)	2-4	District Hospital and Community	Rural maternal and child health problems and services	Review of available data Special surveys Review of cases
5th	April/May 16-19	2-3	District Hospital	Shadow DMO All round care of patients and management of district programmes	Review of cases Observation of TB programme Audit of one activity/ programme

[1] The academic year in Zimbabwe coincides with the calender year. The first term commences in March (February for clinical students), and examinations are in November.

[2] The total number of students entering medical school is currently about 90 and has increased gradually since 1987.

[3] Since 1991 this attachment has been combined with the second year attachment into one of four weeks, which takes place in March.

[4] Previously in July. Moved to after all fourth year clerkships (Paediatrics, O&G, Community Medicine and Psychiatry) have been completed.

In the clinical years students are attached in groups of 2-4 to field sites, in order to facilitate "hands on" experience and the integration of students into local health teams. A wide range of government, mission and private (industrial) hospitals participate. Up to 23 groups have been in the field at the same time in all 8 of the country's provinces. Supervisors, usually drawn from departments teaching in that year, visit two or three groups for about 2 days each. Students, who are principally under the guidance of the district medical officer or equivalent, spend much of their time at the hospital but also participate in outreach activities (such as mobile Maternal and Child Health clinics and supervisory visits to Primary Health Care facilities) and make other forays into the community when possible (e.g. to traditional healers and home visits).

On return from the field, each group of students prepares a written report on activities, and these are circulated back to hospitals. In addition, a day is set aside for oral reporting back after each attachment. All faculty members are invited. Presentations are assessed by invited judges, and prizes are awarded.

From 1991, the first and second year attachments have been combined into one longer attachment which takes place at the beginning of the second year. A possible further reduction to three attachments altogether is under discussion. However, the total length of time in the field will be reduced only slightly while the strain on human and material resources will be relieved. Meanwhile other significant community-based attachments have been developed in the curriculum, notably the family health scheme in the first year and the municipal primary care clinics' rotation in the fourth year.

Successes: What We Have Achieved

At a recent workshop to review the undergraduate medical curriculum, the rural attachment programme was judged by faculty members and students as the most successful component of the new curriculum. The Faculty had achieved most of what it had set out to do, and students had responded fairly positively.

Students are asked to complete an evaluation questionnaire at the end of each attachment. The responses to these generally focus on the immediate difficulties and successes of that attachment. More revealing are the results of an evaluation carried out on the pioneer group of students at the time of their final examinations in 1991 (Appendix). The results show that the students broadly supported the aims of the programme and that they had benefitted. However, the students recommended that the number of attachments be reduced. It is too early to tell if the programme will have any significant impact on the career choices of graduating doctors.

The programme has involved all the departments of the Medical School and provided an opportunity for interaction between the various disciplines. The programme has contributed to the education of the academic staff and not just the students. Staff, frequently unwilling to go out into field, have returned visibly enthused. This may have contributed to the significant shifts which have occurred in some departments towards more community-oriented teaching.

The field attachments have also narrowed the gap between the Medical School and health care institutions in the periphery. Furthermore, many doctors in the field, some of whom are highly experienced, are pleased to be involved in teaching medical students and provide fresh perspectives.

Problems and Difficulties

Three major problems have been finding time in the overall student programme, logistical difficulties, and provision of adequate supervision.

The difficulties of finding slots for field attachments in the timetable arose from the fact that many of the other proposed curriculum changes were not actually implemented. There was little horizontal or vertical integration, and timetables differed little from those in the old curriculum. New activities, such as behavioural science teaching and field attachments, were, therefore, added on to an already full programme. Field attachments have been timed for the University holidays in the preclinical years and squeezed into the third year. Only the fourth and fifth year timetables were implemented as planned. In any case the latter differed little from the old curriculum except for the field attachment. This had the result of pushing the final examinations back close to the end of the year.

The lack of change elsewhere in the curriculum is reflected in the heavy reliance that continues to be placed on barrier examinations whose format and content are unchanged from the old curriculum. The perception of rural attachment as something separate is exemplified by the fact that it is examined in a special paper, rather than related to all the disciplines within medicine. The curriculum as a whole is by and large not community-oriented. The experience of community-based attachments has had little overt impact on what is taught or how it is taught, although it may have more subtle effects. Little reference is made to field attachments during the rest of the teaching, even in subjects such as Community Medicine.

The logistical problems which occurred stemmed from the absence of the planned infrastructural support. Nearly all the ten purpose-built student hostels were incomplete in 1987 - the last was not completed until 1990. Many are inadequately furnished to this day. Accommodation was, therefore, found wherever it was available at an affordable price; for example, at mission hospitals and in training centres. Transport also proved difficult. The money apparently allocated to the Ministry of Health never materialised as vehicles dedicated to the programme. Government vehicles were made available but on an irregular basis and had to be complemented by vehicles borrowed from other parts of the University or hired. The Faculty is now building up its own fleet of vehicles to support the programme.

Supervision of students in the field continues to pose problems. It is frequently difficult to get enough supervisors to go out with student groups, particularly in the first two years - even with the combined attachment. Most departments in the medical school are chronically understaffed, but unwillingness is frequently also a factor. As a result field visits may be cursory. Lack of orientation of supervisors also poses difficulties; little knowledge of survey techniques, community medicine and general medical practice reduce the effectiveness of the input that supervisors may have.

Conclusions and Future Challenges

The University of Zimbabwe Medical School is justifiably proud of the rural attachment programme which has made an impact on students and staff and has undoubtedly been the most successful component of the new curriculum. The success of the programme stems from the long tradition and experience of field attachments which date back to the founding of the medical school and from the attachments being a Faculty and not a departmental activity. Despite the success of the programme, the curriculum as a whole is not community-oriented. The field attachments are not part of an integrated whole, although the experience may have resulted in significant changes in orientation by certain departments. Rectifying the situation is the biggest challenge for the future: organising workshops for teaching staff should be part of the strategy for achieving this. In addition, meaningful community service - beyond simply assisting local health staff in hospitals and clinics - must become an element of the field attachments, so that communities come to support and be involved in the programme. This could be achieved through greater attention to tackling public health problems. The ultimate challenge, that of having a truly community-driven curriculum, is as yet a dream.

Acknowledgements

The field attachment programme is an activity of the whole Faculty of Medicine, and we wish to acknowledge all faculty members, past and present, especially those who participated in the development and implementation of the new curriculum. We have quoted extensively from the new curriculum document, in which we were not personally involved. Above all we wish to acknowledge the tremendous contributions made by the Deans of the Faculty of Medicine over the past ten years. Prof. E. Petropoulos was at the helm of the deliberations that finally led to the development of the new medical undergraduate curriculum. Dr. N.J.T. Gwavava played a crucial role in the early implementation stage of the programme. Mr. A.C. Harid was involved in the strengthening and streamlining of the field attachments and initiated the curriculum review process. Dr. Z.A.R. Gomo, the present Dean, has consistently supported the programme and overseen the major review of the whole of the new undergraduate medical curriculum. We would also like to thank Dr. Gomo for permission to publish this paper. We have held many stimulating discussion about curriculum change with Prof. D. Sanders and Mr. Ch. Samkange. Thanks go to Mrs. A. Munyoro and Mrs. L. Bofu for their assistance. We would like to acknowledge the generous support of the Kellogg Foundation and UNICEF who have respectively donated two Land Cruisers and computer equipment and a Land Cruiser to the programme.

References

Anon. (1958). First report of the planning committee. *Central African Journal of Medicine, 4,* 269-280.

Anon. (1959). Second report of the planning committee. *Central African Journal of Medicine, 5,* 145-169.

Anon. (1985). *The new medical undergraduate curriculum.* Harare, Zimbabwe: University of Zimbabwe.

Harden, R.M., Snowden, S., & Dunn, W.R. (1984). Educational strategies in curriculum development: The SPICES model. *Medical Education, 18,* 284-297.

Mackintosh, M.E., & Rittey, D. (1969). The Wedza district project. *Central African Journal of Medicine, 15,* 17-18.

Nooman, Z.M. (1986). Curriculum implementation: The task and problems of community-based education. In: M.R.A.Majid (Ed.). *Proceedings of the international conference on medical education.* Malaysia: World Health Organization.

World Federation for Medical Education (WFME). (1988). *World conference on medical education report.* Edinburgh, United Kingdom: WFME.

Appendix

Summary of responses to evaluation of the field attachment programme by final year students (1991)

70 out of 71 students responded.

Aim. 86% of responding students agreed that: a) learning about the causes of disease (strongly agree: 50%), and b) learning about the practice of medicine at the district hospital (strongly agree: 54%) are important for medical students.

Usefulness. 80% of students reported that they found the field attachments as a whole either "very useful", "useful" or "of some use"; 6% found them a "waste of time".

Integration. 10% of students thought that field attachments were well integrated with the rest of the curriculum; 37%, 25% and 20% respectively found them "partly", "slightly" or "not at all" integrated; 7% no response.

Changes. 34% and 36% of students respectively recommended retaining the programme but reducing the number of attachments to three of each four weeks or to less than this. No student recommended retaining all five attachments of four weeks each; 13% wanted the programme to be abandoned altogether.

Annals of Community-Oriented Education
1993, Vol. 6, 53-67

Community Orientation at the Faculty of Health Sciences Moi University: A Personal View

R.C. Godfrey
Moi University
Eldoret, Kenya

Abstract

The Faculty of Health Sciences at Moi University puts strong emphasis on community exposure in its undergraduate curriculum.

Eight weeks per academic year are devoted to work in rural health centres and surrounding communities. Students take part in all primary health care activities, conduct health surveys and plan interventions. There is strong emphasis on student participation in health education. Reactions of students and most faculty staff have been favourable to the community programme so far.

The future of the programme may be limited by high costs of transport and accommodation. An urban programme in Eldoret town is currently under way and promises well for the future.

Introduction

"How many wives in that old man's compound were separate householders?" "definitely numbers one and two, - they've been cooking independently for their children for years." "But he still sees a lot of numbers three and four, and says that he feeds with both of them." This conversation was typical of many I overheard recently when tutoring ten undergraduates engaged on a field assessment of health in a rural sub-location near Lake Victoria in Western Kenya. The students were spending four weeks in a rural health centre, conducting a wide-ranging community health assessment questionnaire with recording of heights and weights of children under five. The terrain was rough, the questionnaires extensive, and weighing scales and height measuring boards could become very heavy at the end of a long hot day spent trekking up and down the stony hillsides. However, the students were clearly enjoying themselves, relaxed away from the stress of their normal routine, and learning much about the resilient Luo people in that beautiful part of Kenya.

This paper describes the progress of the community-based programme at the end of two completed years in the life of this new Faculty. As well as highlighting many positive aspects, some of the difficulties and constraints will be discussed, because these may limit and mould the future shape of the programme.

Requests for reprints should be sent to R. Godfrey, Moi University, Faculty of Health Sciences, P.O. Box 4606, Eldoret, Kenya.

The Setting

Kenya (population 25.5 million) has one of the fastest growing populations in the world. More than 50% of the population is less than 15 years old. The health service is made up of public hospitals and health centres, plus a large private sector comprising hospitals, mission hospitals, and many other non-governmental organisations. The public service provides about 60% of the total care, and its distribution is shown in Table I.

Table I. Distribution of Kenya's public health services

Province	Provincial Hospital	No. of District Hospitals	No. of Health Centres
Central	Nyeri	11	41
Rift Valley	Nakuru	17	35
Eastern	Machakos	12	42
Nyanza	Kisumu	4	29
Western	Kakamega	3	26
North Eastern	Garissa	3	5
Coast	Mombasa	14	5
Nairobi City	Kenyatta National Hospital	2	30

Notes:

1. The government guideline for population to be served by a health centre is 10,000 - 15,000. At present the figure is nearer 30,000 - 50,000.
2. The distribution of hospitals reflects the marked differences in population density in different provinces, from densely populated Rift Valley and Central Provinces to the largely arid North Eastern Province.

The output of doctors from Nairobi Medical School is approximately 100 per year, and there are nearly 3,000 doctors in Kenya at present. However, the great majority of these are found in the major cities where their time is spent mainly in private practice. Rural health centres (the first point of contact for most patients) are run entirely by clinical officers who have a three year training in one of four colleges in Kenya.

Thus, the all-important community aspects of medical care are outside the experience of the most highly qualified members of the health care profession. It was to correct this anomaly that the Faculty of Health Sciences at Moi University decided to adopt a substantial community-orientation in its curriculum.

The Faculty of Health Sciences

Moi University was founded in 1984 as Kenya's second public university on the recommendation of a Presidential Commission. The Main Campus lies 35 km. from Eldoret town in the North-West Highlands. The Faculty of Health Sciences is based in the town itself, closely associated with Eldoret District Hospital. New buildings are almost complete to house the library, student and staff accommodation, and a learning resource centre. The hospital itself is being upgraded in three phases, and will eventually be a major teaching and referral institution.

The Faculty takes 40 students each year, roughly in a male: female ratio of 4:1. There are plans to double the intake. Kenya has an education system based on eight years primary education, four years secondary, and four years at University. Students arrive as early as 17 years of age from a generally rather rigid, didactic and intensive schooling. There was concern that they would find it difficult to adapt to the problem-based, student-centred, self-learning philosophy of this Faculty. In fact, most of the fears have proved unfounded. The students are, however, less well prepared in subjects such as chemistry, compared with their European counterparts.

Students come from many different backgrounds. Roughly half are from rural farming families and are almost totally dependent on government bursaries to attend University. There is much concern at present, because public money, including student bursaries, is in very short supply.

Students have no choice whether they will attend Nairobi Medical School or come to the new Faculty in Eldoret. For some, it was an unpleasant shock to be sent up-country to an "experimental" system of medical education. Now few would wish to go back to the conventional course offered by Nairobi. It has to be said that the attitude of many in Nairobi Medical School towards the new school in Eldoret varies from luke-warm to frankly sceptical. It is common to hear from Nairobi that we are training "bare-foot doctors" because of the emphasis on community work. Until our students graduate on equal terms with Nairobi students these criticisms will continue. Those of us working here know that the Moi students are doing well in terms of their knowledge base, and the innovative system may be giving them an edge in terms of self-confidence and expression.

The Community Programme

This programme has been entitled "Community-Based Experience and Service" (COBES). It has been allocated eight weeks of each forty-week year, and its **goals** as set out by the Faculty are: 1) to improve the health of the community; 2) to prepare students for practice in the community; and 3) to promote community-based research.

A number of **objectives** are expected to have been achieved by the end of six years through the COBES programme: these include proficiency in community organisations, health promotion, management of primary health care delivery, team management, planning and execution of community surveys, specific interventions. The essential point about all these objectives is that they can only be achieved by practical work in the community - no amount of reading can substitute for this experience.

Practical Arrangements

Five rural health centres are being used at the moment for the COBES programme. The nearest is 35 km. from Eldoret and the furthest 120 km. Many of the health centres in Kenya were built in the early 1970's as demonstration centres. On the whole they remain in good repair, and have ample facilities for both out-patient and in-patient care. Many are underused through lack of staff and equipment; in particular the in-patient wards are nearly always empty in many centres. Invariable features of the centres include an out-patient clinic, a maternal and child health department, a delivery suite, a pharmacy (often out of stock), records, etc. Residential hostels are attached, and up to ten students stay in each centre during an attachment. Two centres were already designated for rural Health Worker training before the advent of the Faculty and have readily adapted to the presence of medical students. The others have only rudimentary facilities, and students have to fend largely for themselves (taking bed linen, cooking utensils, hurricane lamps, etc. with them). One or two tutors reside with the students during the attachments, and a driver and vehicle are in constant attendance.

The Faculty allocates a small number of books from the main library which the students take with them during their attachments. The tutor(s) oversee the daily work of students, attending not only to academic matters, but also attempting to solve a host of other sometimes surprising problems, including student drunkenness, errant drivers, unacceptable food, vehicles stuck in mud, to name but a few. Apart from the specific tasks of each community attachment, the Faculty has also decided that the normal pattern of problem-based learning which runs through each and every year shall continue during rural attachments. Tutor(s) and students therefore work on problems, often with a community bias, in twice weekly tutorials.

Content of the Community Attachments

The essential elements of each community attachment are: 1) the identification of health problems in the community; and 2) participation in primary health care.

The first of these activities often involves the students in house-to-house survey work. They quickly learn how to approach the community through the correct administrative channels, and particularly enjoy functions such as Barazas (community get-togethers, chaired by Chiefs and Elders) in which they explain their work. Their surveys involve the correct use of epidemiological tools and provide essential data for later interventions which will be put into effect, if students revisit the rural communities in successive years. To this end we have included a two week epidemiology course before the second-year COBES attachment.

The second activity, participation in primary health care, involves the students in many activities originating from the rural health centres. Not only do they take part in the daily work of the health centre, but they are also encouraged to join in outreach programmes with community workers. Even at this early stage in their undergraduate training, students can be very effective health educators.

During each rural attachment, students are assessed by tutors using a structured questionnaire (Appendix A). Each student also produces a written report. Marks for each community attachment accrue during the course, and will account for at least 10% of the final total at the end of six years.

Planned Development of COBES

Table II shows the current plans for the development of the programme throughout the six-year undergraduate course. It was developed at a time when money was more easily found, both from within Kenya and from overseas donors. For reasons stated later it may undergo considerable modification. The Faculty has debated at length whether the same students should keep returning to a given rural centre each year; the present decision is that they should rotate to different centres.

Reactions to COBES (Appendices B and C)

It is pleasing to find that the **students** are almost unanimous in supporting the community programme. Comments such as "you understand factors affecting health so much better after working in the community" are universal. Many also enjoy especially using practical skills when they vaccinate children, give health talks or weigh babies in a mother & child clinic. Some of the students worry about the constant questioning of the community without giving much in return, and they look forward to more intervention in the future. The students do not find it easy to continue their usual intensive self-directed reading in the somewhat relaxed atmosphere of a community attachment, and they particularly resent the fact that their regular continuous assessment tests (CATs) often come soon after field work. A few students admit that they are soon bored with work in health centres, and others do not find much to keep up their enthusiasm during several weeks of administering the same questionnaire over and over again.

Reactions amongst **Faculty staff** to the COBES programme are mixed. A small core of enthusiasts are confident that this is an excellent community programme, which is already an outstanding positive feature, and which will make Moi University an important force in medical education in future years. A rather larger number of staff accept the programme, though they are not greatly committed to it: some feel that it is somewhat extravagant to remove the students for so many weeks from their normal learning pattern. Many of this luke-warm group have become markedly more enthusiastic after working as residential tutors. A few in the Faculty, both basic scientists and clinicians, are openly sceptical.

Table II. Suggested themes for the yearly COBES programme

Year	Theme
1. 1st Placement (4 weeks)	Introduction to community setting and identification of common health problems in the community
2nd Placement (4 weeks)	Understanding of health care delivery services and participation in Primary Health Care activities
2. (8 weeks)	Identification of factors affecting health in the community
3. (8 weeks)	Plan and manage intervention strategies in solving health problems in collaboration with other relevant sectors
4. (8 weeks)	Field studies and management of selected Tropical Diseases, such as Schistosomiasis, Malaria, Leprosy, Trypanosomiasis, T.B.
5. (8 weeks)	Community-Based Research and Programme Evaluation
6. (18 weeks)	Clerkship Includes - Clinical work - Primary Health Care activities: preventive and health promotion programmes;participate in management of district health services - Research

Constraints on the Community Programme

Practical concerns

The programme is proving costly. Accommodation charges were originally met from the University students' field supplements ("boom"), but recent policy changes have severely reduced these supplements. External sources of finance are being sought, but cannot be expected to last indefinitely.

Transport costs are also heavy: four vehicles and their drivers are away from the main Faculty office during every community attachment, with extra fuel and maintenance costs.

Also the system of residential tutors means that the Faculty is depleted during every attachment, and it is difficult to run the normal curriculum at the same time. In fact, it will not be possible to continue the rural programme in its present form once all six student cohorts are present, unless there is a substantial increase in funding, vehicles and staff numbers.

Educational concerns

What do students actually learn from their community attachments? At first glance, the work of a typical health centre looks as though it will yield abundant clinical experience for students. Certainly there are plenty of patients, at least when drugs are known to be available. The standard of clinical care is often perfunctory. Many patients are seen briefly by Clinical Officers, who have three years of training, plus two years hospital experience but are still very junior to be in charge of health centres. Patients are rarely examined, but always prescribed drugs often by injection, even though the majority of patients appear remarkably fit; one wonders why they are attending the health centre at all. Such practices do not provide a good example for the students. Although they can see the deficiencies, they feel too junior to make any critical comment. Some of the best health centre experience is in maternal and child health departments, but even there a few days suffice to see all that takes place regarding local policies in vaccination, antenatal care and family planning.

Out in the community there is also a danger of monotony. As students accompany primary health care workers, or take themselves from household to household, they find the same problems recurring ad *infinitum* (overcrowding, suspect sanitation, faulty nutrition, and so on). Of course, the well motivated student will find a host of other interesting social aspects to maintain interest, but in purely educational terms community exposure has its limits. Finally there are concerns about the attitude of communities, if they are subjected year after year to the Faculty's students. There are naturally high expectations amongst the community, and a sense of disappointment is bound to follow, if the students do no more than conduct fact-finding surveys. We fear that "community exhaustion" may set in, however diplomatically the Faculty approaches its communities.

The Future

As in any new Faculty, the curriculum is under intensive scrutiny, and the community programme will almost certainly change due to the constraints and concerns mentioned above. The following plans are under active consideration.

Introduction of an urban COBES programme

Eldoret town (population approximately 300,000, rising rapidly) has several large areas of overcrowded and poorly-serviced housing, where social and medical problems seem worse than in rural areas. The students are starting to assess the needs of these communities by attaching themselves to selected families, whom they visit regularly.

After this initial phase the students will undertake a number of projects in these deprived areas. Clearly many of the important needs of the communities lie outside the scope of the Faculty, but the students will fill a useful role as health educators and investigators. There are many all-pervading problems - poverty, alcoholism, depression, suicide, trauma, prostitution (HIV positivity rate is currently 25% in one urban community). All these are matters which the students can investigate, and they may be able to suggest remedial interventions for some of the problems. They will not necessarily confine their interests and interventions to medical matters. We hope that they may be able to help with projects involving income generation, environmental upgrading, house renovation, animal husbandry, and market gardening. In all this work they will learn to cooperate with other municipal departments and non-governmental organisations.

A major advantage of this proposed urban programme will be its proximity. Students have been presented with bicycles, a gift from the British Overseas Development Administration, and can visit their designated urban families and their future projects free of transport costs. Also projects can be carried out on a continuous basis - we anticipate that third and fourth year students may be spending one day a week on their urban projects.

Introduction of a mini-thesis on a community project

To emphasize the importance of the continuous strand of community work during the curriculum, the Faculty is considering assessment of its students by means of a mini-thesis. Each student will write a thesis based on project work in the community. The components of these theses will include the usual literature review and discussion, and will also be expected to demonstrate a proper grasp of epidemiological method and statistics. The marks awarded to the thesis will constitute a substantial proportion of the overall final mark.

Attachments of students to health centres as senior clerks

By the time our students reach their fifth and sixth years they should be sufficiently senior to play an active role in running the health centres without close daily supervision. The Faculty hopes to establish senior clerkships for them in a number of urban and rural health centres, alongside their usual rotations in medicine, surgery, etc. In this way the Faculty can contribute to an upgrading of clinical practice in the health centres by encouraging fuller assessment of cases, by instituting appointment systems, and by generally smoothing the management of the centres and their patients.

Concluding Comment

The author came to this Faculty with a traditional education and long experience as a hospital physician in the United Kingdom. After a year here, I am delighted to find that my reservations about community experience for undergraduate medical students have been dissipated. When I cycle with students in the urban slums of Eldoret, I feel that we are seeing with our own eyes the root causes of the majority of ills that later present to health centres and hospitals. Many social problems cannot be solved by medical students, but at least they can be better understood. I am confident that the Moi University Faculty of Health Sciences undergraduates will become excellent and well-educated doctors because of their breadth of experience in the community. It is now up to the Kenyan Government to make sure that these new graduates can use their training properly.

Acknowledgements

I thank Professor H. Mengech, Dean, Faculty of Health Sciences and Dr. W. Odero, Chairman, COBES Committee, for helpful comments, and Mrs. J. Godfrey for typing the script.

Appendix A

Assessment of student performance during COBES posting

Student's name .... Student's number ....
Tutor's name ....
Date of posting ....
Place of posting ....

1 Unsatisfactory	2 Poor	3 Satisfactory	4 Good	5 Excellent

Please mark X in the appropriate box below:

		Midterm	Endterm
1.	Appearance and general behaviour	☐☐☐☐☐	☐☐☐☐☐
2.	Punctuality	☐☐☐☐☐	☐☐☐☐☐
3.	Relationship to other students	☐☐☐☐☐	☐☐☐☐☐
4.	Relationship to people in the community	☐☐☐☐☐	☐☐☐☐☐
5.	Collection of data	☐☐☐☐☐	☐☐☐☐☐
6.	Presentation of data	☐☐☐☐☐	☐☐☐☐☐
7.	Interpretation of data	☐☐☐☐☐	☐☐☐☐☐
8.	Ability to relate findings to community health problems	☐☐☐☐☐	☐☐☐☐☐
9.	Student's critique of his own approach to the problems	☐☐☐☐☐	☐☐☐☐☐
10.	Ability to suggest new approaches to the solution of problems	☐☐☐☐☐	☐☐☐☐☐
11.	Contribution to group discussion	☐☐☐☐☐	☐☐☐☐☐
12.	Performance in crisis situation	☐☐☐☐☐	☐☐☐☐☐
13.	Assessment of student's written report	☐☐☐☐☐	☐☐☐☐☐

Remarks by tutor ....
....
....

Student's comments on his/her performance ....
....

Date .... Signature of tutor ....

Adapted from WHO Technical Report Series, No. 746, (1987) Community-Based Education of Health Personnel: Report of a WHO Study Group; P. 53.

Appendix B

COBES programme evaluation

To be completed by individual students and tutors at the end of the COBES posting.

Name of student or tutor ....

Date of posting ....

Place of posting ....

1	2	3	4	5
Very poor	Poor	Satisfactory	Good	Excellent

Please mark X in the appropriate box below. If the statements are not applicable write N/A next to the box:

I. IMPLEMENTATION Preparation for COBES field posting

Comments:

a. Pre-COBES activities ☐☐☐☐☐
b. Checklist / Equipment ☐☐☐☐☐
c. Workplan ☐☐☐☐☐
d. Objectives ☐☐☐☐☐
e. Other (specify)

II. WORKPLAN for entire COBES period

a. Ability of students to develop a workplan ☐☐☐☐☐
b. Ability of students to implement workplan ☐☐☐☐☐
c. Duration of posting ☐☐☐☐☐

III. COMMUNITY SENSITISATION to student activities

☐☐☐☐☐

IV. HEALTH CENTRE SENSITISATION to student activities

☐☐☐☐☐

V. LEARNING RESOURCES

a. Books / materials ☐☐☐☐☐
b. Reading facilities ☐☐☐☐☐
c. Community leaders ☐☐☐☐☐
d. Community (people) ☐☐☐☐☐
e. Faculty resource persons ☐☐☐☐☐
f. Health centre staff ☐☐☐☐☐
g. Other (e.g. government officials, etc.) ☐☐☐☐☐

VI. TUTORIALS during COBES posting

a. Timing ☐☐☐☐☐
b. Objectives ☐☐☐☐☐
c. Participation by group ☐☐☐☐☐
d. Guidance ☐☐☐☐☐
e. Organisation ☐☐☐☐☐

VII. STUDENT PARTICIPATION

a. In planning COBES programme ☐☐☐☐☐
b. In community activities ☐☐☐☐☐
c. In health centre activities ☐☐☐☐☐
d. In PBL tutorials ☐☐☐☐☐

VIII. COMMUNITY PARTICIPATION in field activities

a. Relevance to programme objectives ☐☐☐☐☐
b. Relevance to field objectives ☐☐☐☐☐

IX. HEALTH CENTRE STAFF PARTICIPATION

a. Relevance to programme objectives ☐☐☐☐☐
b. Relevance OPS objectives ☐☐☐☐☐

X. SELECTION OF LEARNING SITES

☐☐☐☐☐

XI. TRANSPORT

a. Availability ☐☐☐☐☐
b. Accessibility ☐☐☐☐☐
c. Utilisation ☐☐☐☐☐

XI. CATERING SERVICES

a. Diet / Menu ☐☐☐☐☐
b. Timing ☐☐☐☐☐
c. Adequacy (amount of food) ☐☐☐☐☐

XII. ACCOMMODATION

☐☐☐☐☐

XVI. FEEDBACK

a. To the community ☐☐☐☐☐

b. To health centre staff ☐☐☐☐☐

XIII. RECREATION

☐☐☐☐☐

XIV. UNANTICIPATED PROBLEMS while in COBES posting

a. Ability to recognise and report problems ☐☐☐☐☐
b. Ability to formulate possible solutions ☐☐☐☐☐
c. Ability to implement the intervention ☐☐☐☐☐
d. Outcome of the intervention ☐☐☐☐☐

XV. ANY OTHER COMMENTS

Appendix C

Student Perception of Tutor's Skills

Name of student .... Group ....

Name of tutor .... Midpoint .... Final ....

Below are statements describing tutor skills. Please read each statement carefully and indicate on a 1-5 scale the best description of your tutor.
(1 = unsatisfactory; 2 = poor; 3 = satisfactory; 4 = good; 5 = excellent)

1. Shows enthusiasm for the group
   1 2 3 4 5
2. Facilitates student-centred learning
   1 2 3 4 5
3. Facilitates and supports positive interpersonal relationships in the group
   1 2 3 4 5
4. Facilitates and supports positive interpersonal relationships in group interaction in the health centre
   1 2 3 4 5
5. Facilitates and supports positive interpersonal relationships in group interaction in the community
   1 2 3 4 5
6. Helps the group be aware of how it is working
   1 2 3 4 5
7. Encourages effective feedback within the group
   1 2 3 4 5

8. Keeps the group "on track" and using time effectively

1 2 3 4 5

9. Helps the group set appropriate learning issues/activities

1 2 3 4 5

10. Helps the group identify errors or deficiencies

1 2 3 4 5

11. Asks thought-provoking questions

1 2 3 4 5

12. Actively contributes sharing information and experiences

1 2 3 4 5

13. Is comfortable discussing issues outside of area of experience

1 2 3 4 5

14. Helps integrate basic science, clinical and psychosocial issues in the project, problem or case discussions

1 2 3 4 5

15. Promotes the use of resources outside the group (such as reference materials, community and content experts)

1 2 3 4 5

Comments ....

....

....

Adapted from Parallel Curriculum Evaluation, Bowman Gray School of Medicine, North Carolina, U.S.A. (1990)

Annals of Community-Oriented Education
1993, Vol. 6, 69-81

Community-Based Medical Education: A Review of the Oldest Programme in Nigeria

M.C. Asuzu
University College Hospital
Ibadan, Nigeria

Abstract

Community-based medical education (CBME) was considered to be a fundamental issue in general professional medical education for developing countries by the founding fathers of indigenous medical education in Nigeria. When the colonial University of London College in Ibadan became autonomous as the University of Ibadan following the attainment of national independence in 1960, it developed its curriculum to be as community-based as possible. The CBME centred mainly on the Ibarapa Community Health Programme of the University to which the students were ultimately sent for an 8 weeks community health practical experience. Other medical schools in Nigeria subsequently followed this model.

This paper reviews the background of the development of this programme, the changes that it has undergone since then, as well as its current status.

Introduction

Western medical practice and later its traditional teaching hospital-based medical education came to Nigeria through the colonial British Administration (Schram, 1971). The first medical school in British West Africa and indeed all West Africa, located in Ibadan in 1948, was a college of the University of London. It trained students for the University of London MB BS degrees, and strictly followed the curricula and methods of the London medical schools. When Nigeria gained independence in 1960 and converted the London University College to the indigenous University of Ibadan, the founding fathers accepted the widely felt need that the University's MB, BS degrees should be entirely different from the British model. They felt that it was not only to be community-oriented but also truly community medical practice based (community-based) (Brown, 1961; Gilles, 1965). It was their desire to produce doctors who would be well versed in both the theory and the practice of public health and preventive and community medicine. This was thought to be necessary, in order to meet the actual health service needs of the community which were obviously not met by the entirely teaching hospital-based and curative-orientated medical graduates of the overseas western medical schools.

The wide acceptance of these notions resulted in the development of the new and indigenous Ibadan Medical School curriculum, starting with the 1962-1967 student intake.

Requests for reprints should be sent to M. Asuzu, University College Hospital, Department of Preventive and Social Medicine, Ibadan, Nigeria.

The curriculum aimed to have community medicine taught in all the five years of the course, culminating in an eight week rural residential posting in the then Ibarapa Community Health Project (Ogunlesi, 1965). This posting became a programme in the late 1970s, and the 1980s, and was renamed the Ibarapa Community and Primary Health Care Programme. The first intake of students in this new curriculum in 1962 undertook the first Ibarapa posting in 1963. The acceptance of the philosophy and the apparent success of the Ibadan model of community-based medical education is reflected in the fact that all the subsequent medical schools in Nigeria (14 to date) have tried to develop their curricula along these lines (Omotara et al., 1991). However, many of these schools have only succeeded to the level of achieving community-oriented medical education. Many still have problems establishing a residential base or ensuring community or government involvement, which are needed for a truly community-based education.

Limited evaluations of the Ibadan CBME programme by both staff and students have demonstrated its success (Saad Ibrahim, 1967; Adetuyibi et al., 1965; Asuzu, 1989; Bomba, 1987). Over the years, the contents and methods of the community health training programme have been specifically improved in the areas of competence-based, self-directed and problem-solving approaches to medical education. This paper is the first in a series of studies aimed at an overall and comprehensive evaluation of all the aspects of the present Ibadan CBME programme.

The Origin of the Ibarapa Programme-Based Ibadan CBME Training

According to Brown (1961) and Gilles (1965) the medical needs and medical education at the end of colonial rule in Nigeria should emphasize preventive and community medicine. Moreover, Gilles (1965) asserted that the academic departments of preventive and community medicine in such medical schools would remain etherial, impractical and unconvincing, unless they were linked in some way with the government public health services, preferably at the lowest community level (Clarke, 1981).

In keeping with this philosophy, the Ibadan Medical School developed the Ibarapa Community Health Programme within the then Western Nigerian Regional Government Rural Health Centre at Igbo-ora in the Ibarapa District, to be the culminating point of its community-based medical education. Participation in the running of the programme has come to include the University Medical School and the Regional or its succeeding State Governments, the Teaching Hospital, the Local Governments in Ibarapa and wealthy and enlightened individuals, as well as the various autonomous communities in the area. All these parties are represented in the Ibarapa Programme Management Committee, based at the medical school. At the commencement of the Ibarapa Programme in 1963, community health training consisted of some theory in environmental health in two of the three terms in each of the first two preclinical years. In addition, all the subdisciplinary areas of public health were discussed on one day a week during the three months introductory course in general clinical medicine.

The main practical community health training took place during the eight week residential rural posting at the Comprehensive Rural Health Centre at Igbo-ora in the penultimate year of the undergraduate course. This campus had been developed to provide residential as well as other teaching facilities to complement those at the teaching hospital in Ibadan (University of Ibadan, 1976).

The Development of the Ibadan Community Health Curriculum

The Ibadan CBME programme has gradually expanded and now has components in all the five years as intended from the very outset (Table I). In the two most recent years, two extra blocks of six and two weeks respectively have been included in the 1st and 3rd clinical years. These two blocks have replaced the year-long weekly tutorials in these two years, as well as the revision time in the final year (Department of Preventive & Social Medicine, 1985).

In addition, the Ibarapa posting itself has become more neatly structured into six rotational activities (Table II) for the six groups in each posting. Four batches of students now come each year, and their size has varied in the last two years from 34 to 36 to 47 to 48 in the 1992/93 academic year. During these 8 weeks, each of the six subgroups also plans, executes, analyses, writes up and presents a community health epidemiological research project. This is subsequently written-up by each subgroup as a mandatory requirement for the award of the MB BS degrees.

The course objectives have been set out in a booklet (Table III). The booklets of course contents and objectives for all the courses are given to the students at the beginning of their training in Community Medicine in the first year. The relevant booklet is explained at the beginning of each individual course component as a necessary base for self-directed learning. Each booklet contains places where the signature of a teacher is required for specified learning activities, e.g. attendance at the endemic and venereal diseases clinics run by the Department. The attendance sign-ups are used as part of the continuous assessment of the students. Other on-going methods of assessment, such as the end of course tests, are also used by the coordinators of the different courses. These scores, submitted at the end of each course, add up to the overall continuous assessment score in community medicine for the final MB BS examination. The continuous assessment contributes 30% to the marks in the final year Preventive and Social Medicine (PSM) examination.

For the Ibarapa posting (Table II) the competences to be acquired in each of the six rotational activities are contained in the Ibarapa posting booklet. An example using the Health Education component is set out in Table IV. Continuous assessment for each of the six rotations includes attendance, participation, as well as marks for class work and written assignments. The students are also assessed for the non-rotational activities (Table II). There is also an end of course test in all aspects of community medicine.

Table I. Outline of the Ibadan Medical School MB, BS teaching in Community Medicine for all 5 years of the course, 1992

Year	Course titles and descriptions	Timing
Year 1	Introduction to biostatistics	2nd Semester
Year 2	Introduction to demography and health statistics Introduction to environmental health Man and his environment/Medical Sociology Research (Survey) methods in public health	1st Semester
Year 3 (1st Year Clinical)	Introductory course in community medicine	March-April
	Integrated lectures, a 4 symptom and 4 disease course which is shared with other specialties	April-January
	Block Posting in PSM - 6 weeks theory, limited field experience, and lab. work within Ibadan metropolis	2nd Semester
	Endemic diseases clinic teaching (Mondays) Sexually transmitted diseases clinic teaching (Tuesdays & Thursdays)	Throughout the year but mandatorily during block posting
Year 4 (2nd Year Clinical)	Ibarapa Community health posting (8 weeks for each student group) Endemic Diseases and STD clinics as in Year 3	May-December in 4 groups
Year 5	Revision Course (2 weeks) Endemic diseases and STD clinics as in Year 3	Very end of medical school training

Table II. Components of the eight week Ibarapa (Igbo-ora) posting in the Community Medicine clerkship of the Ibadan CBME, 1992

1. Three-day introductory period of lectures, site visits, library search, and epidemiological research protocol development.

2. Six-rotational training weeks in:
   a. Primary clinical community medical care at the comprehensive health centre/ community hospital, Igbo-ora (including experience in the X-ray services, laboratories, medical records, home visitor's services and the pharmacy);
   b. Primary medical (secondary health) care at the District Hospital and the Awojobi Clinic, both at Eruwa;
   c. Maternal and Child (family) health services within the District public and primary health care system;
   d. Health education;
   e. Environmental health;
   f. Occupational and school health.

3. Weekly sub-group seminar presentation in general medical practice.

4. Weekly sub-group seminar presentation in primary health care concepts and management.

5. Weekly review of progress in epidemiological research.

6. Weekly review lectures on different subdisciplines in community health.

7. Weekly tutorials on the subdisciplines and topical issues in public health.

8. Nine days of end of posting activities - study, analysis, write up and presentation, theory revision and end of course test.

Table III. Example from course objectives booklet. Course objectives, competences and content for the occupational health component

1. **Broad Objective**

   To make the student aware of the relationship between work and health and to enable him to recognise and control the common health problems associated with the working environment.

2. **Specific Objectives**

   At the end of the course, the student should be able to:

   i. describe the components of the work environment and their effects on health;
   ii. identify the common occupational health problems of Nigerian workers, and outline programmes for their control;
   iii. outline the organisation and functions of an occupational health service.

3. **Methods of Instruction**

   i. Lectures
   ii. Guided field work, including measurements and factory visits
   iii. Case studies
   iv. Tutorials.

4. **Course Content**

   i. History of occupational health
   ii. The environment of places of work
   iii. Common occupational health problems in Nigeria and their control
   iv. The health problems of agricultural workers in Nigeria
   v. National and international regulations relating to occupational health.

Past Evaluations of the Ibadan CBME Programme

Evaluations of the Ibadan CBME programme have been carried out for personal interest or as part of the evaluation processes of the medical school. These evaluations were used to improve the programme (Saad Ibrahim, 1965; Asuzu, 1989; Bomba, 1987). Most of the evaluations focused on the Ibarapa posting. Despite the limitations, on which suggestions for improvement were based, the evaluations found that the programme appeared to achieve generally most of its stated objectives, at least according to the short term measures used in these evaluations - aspects of knowledge, attitudes and practical competence.

Table IV. Competences expected by the end of the week in Health Education of the Ibarapa programme in community medicine

1. Provide patient counselling by:
   a. establishing cordial relationship with the patient;
   b. making behavioural and educational diagnosis;
   c. guiding the patient to choose feasible solutions for his or her problems.

2. As a member of a group plan and deliver a health presentation on a relevant topic to a group in clinic or community.

3. Conduct a community diagnosis and:
   a. identify the strengths and problems of the particular community;
   b. indicate the factors that are responsible for these conditions.

4. Plan and deliver a training session for volunteer primary health workers (PHW).

5. Conduct a supervisory visit to a village based PHW, and:
   a. identify the skills and functions of the PHW;
   b. assess the level of performance of the PHW;
   c. identify constraints to effective delivery of PHC at the village level;
   d. recommend reasonable solutions to these constraints.

6. Observe the design of a health service and critically assess how factors such as those below may affect patients' compliance and utilisation behaviour:
   a. organisation - arrangement, flow, type, access etc. ;
   b. personnel - number, skills, attitudes etc. ;
   c. material resources - availability of equipment, supplies, drugs etc. ;
   d. physical environment - comfort, cleanliness.

Bomba (1987), for example, found that attitude, knowledge and skills of the students improved significantly in community health (and PHC) in general and in health education in particular.

However, he felt that the posting should be extended for further improvement in health education. In the latest unpublished official evaluation of the entire medical school curriculum by a team lead by the author, the final year students suggested that more time be given for a basic course in community medicine before the Ibarapa posting. These recommendations have resulted in the creation of the six weeks "Block Posting" for principally theoretical teaching in community medicine (Table V). The Block includes mandatory attendance at the Community Medicine Department's endemic diseases clinic (Mondays) and the sexually transmitted diseases clinics (Tuesdays and Thursdays).

It does not seem possible to extend the posting time for community medicine or health education, because it is not considered possible to increase the duration of the MB, BS training beyond the present 5 years. It has always been held that students produced by our medical school, in spite of our emphasis on general medical practice (COME) and community medicine (CBME), it must also meet and indeed surpass the average international competence in high technology clinical medicine.

Other Special Features of the Ibadan CBME

General medical and private practice training

The community medical training (CBME) of the Ibadan Medical School has its emphasis on public health, preventive and community medicine, and primary health care, down to the lowest level of the organised government systems. However, it has been found necessary to strengthen the secondary health care content, that is general (family) medical practice, or community-oriented medical education (COME). This is necessary in order to bridge the gap between single organ super-specialist medicine and the bottom line, community-based medicine. This gave birth to the outside postings in two state government and two mission general hospitals. The Ibarapa posting also contains a one week rotational activity in secondary health care at the District State Government Hospital. This district hospital, like most others, suffers major deficiencies in staff and materials.

Half of the seven days of that rotation are used alternately for a training experience in a private hospital by half the students in each subgroup. The proprietor of this medical centre is a specialist surgeon and a product of indigenous postgraduate medical education in Nigeria. He is an associate lecturer in the Department of Surgery. He has operated his hospital on nearly 100% locally manufactured equipment, such as hospital beds, operating theatre tables, haematocrit centrifuge, autoclave, water distiller. These have resulted in initial and running costs many times lower than the cost of imported equipment. Some of this equipment is now produced on a limited commercial scale.

The three to four day rotation at the Awojobi Clinic provides students with practical experience in relevant private medical practice, self-application, appropriate technology and patriotism in health care. We believe that this may be a possible antidote to the brain-drain syndrome which CBME and COME should also be addressing in developing countries.

Table V. Component Courses of the 6 week of the Block Posting (core course) in Preventive and Social Medicine (8 am - 1 pm, 3 - 6 pm Monday - Friday: theory, field work and practicals)

1. Introduction to Epidemiology: principles, terminologies and methods.
2. Epidemiology and control of communicable and non-communicable) diseases.
3. Family (Maternal and Child) Health.
4. Occupational Health.
5. Health Education.
6. Social Medicine.
7. Health Management.
8. Environmental Health.
9. Biostatistical applications and computers.
10. Public Health Nutrition.
11. International Health.
12. Medical Ethics.
13. Primary Health Care.
14. Parasitology, medical entomology and public health laboratory.

The students' end-of-posting evaluation of this aspect of the Ibarapa posting has consistently shown a 4:1 positive versus negative impact on the students. The negative impact stems from the inadequacies of the District Hospital, including sometimes the absence of doctors in the hospital or lack of basic facilities to work with. At the Awojobi Clinic, negative impact on the students relates to their feeling of an excessive demand on them to be punctual and hard-working, as well as the proprietor's seeming unwillingness to teach anybody who does not perform up to his expectations. Other negative views arise from what some of the students consider as over-improvisation, which they believe makes his practice *look* substandard, even though evaluations of health outcomes are as good as in any of the best equipped hospitals in the country (Awojobi, 1987; Awojobi et al., 1985).

Moreover the peasant patients feel more at home with the locally made equipments than with the imported ones. The positive impact of these two hospitals stems from the opportunity that they provide for students to draw comparisons and to see how the government primary medical services actually work, perhaps to be challenged by it, as Dr. Awojobi was in his junior days. The story of Awojobi and the first hand experience at his centre help to bring home how one may positively respond to such challenges. Evidence of positive impact is provided by the number of students who would like to spend more time than was originally planned for them, their evaluation of the centre, and our own resident doctors in surgery or general practice who request an extension of their posting at Dr. Awojobi's hospital.

Time gained for community medicine

In the past the elective posting was used by the students for experiences in medicine abroad, if they could find the necessary financial support. Alternatively, students would repeat a posting in which they had not done well, or one in which they wanted to gain more experience. Progressively, as the non-teaching hospital based training programmes developed, they have taken their place in the 8 weeks elective posting period. They have also expanded into any other available time that could be found during the 5 year calendar period, including holiday periods now reduced in both numbers and duration.

The preclinical training in environmental health has been re-organised and is now used to teach biostatistics, medical sociology, public health research (survey) methods, as well as the original environmental health (Table I).

Integrated lectures

These lectures have been redefined to be an interdepartmental theoretical course during the elementary postings in medicine and surgery. Common conditions or symptoms are discussed by lecturers from appropriate specialties in an integrated manner, sequentially topic by topic. The purpose is to help clinical students not to over-departmentalise diseases, in a sense to counterbalance specialist teaching.

Non-medical students in the Ibadan CBME

The University College Hospital (UCH) had used the Ibarapa programme for the two to four week practical experience in its diploma nursing course and in the midwifery course. While student midwives continue with this experience, another site closer to Ibadan has been developed for the community nursing experience. The UCH also uses the programme for the community health officers' (CHOs) six week practical training. The CHOs are Nigeria's new primary health care assistant community medical officer cadre of health workers (Asuzu et al., 1992). The School of Hygiene uses the Ibarapa programme in its public health nursing higher diploma/CHO sandwich course, as well as for the senior community health extension workers' (SCHEWs) upgrading course. The SCHEWs are the immediate, lower cadre of primary health care workers to the CHOs.

Graduate students and other undergraduate students come to Igbo-ora for some field practice or the research components of their studies. While these students are in Igbo-ora with the medical students, some teaching is common for them all. This interprofessional education provides our students with a broader education. Local and foreign researchers also come to Igbo-ora. Not infrequently they have involved students in their field work to mutual benefit (Department of Preventive & Social Medicine, 1988).

Overseas students spend part of their time in the Ibarapa programme. Their interests have been mostly in general practice, as well as in tropical and community medicine and health. An average of 10 to 15 foreign students per year take part in the Ibarapa posting; this includes postgraduate students in general practice or family medicine programmes.

Involvement and integration with public health care services

Based on the collaboration of all the tiers of government and community, both state and local government staff and facilities have been used in teaching the students. The key public health physician has usually been appointed associated lecturer in the Department of Preventive and Social Medicine. The reciprocal appointment of the academic public health physicians as honorary consultants or statutory medical officers of health within the state government has not been achieved. Such a status would enhance access to practical service and educational experiences for both staff and students as Gilles (1965) had envisaged. This status is desirable not only at the state government level but also within the Ibadan (urban) and the Ibarapa (rural) local government area (LGA) health services. Reciprocal appointment of suitable medical officers of health at these local governments as associate lectures will further integrate and enhance these service and teaching assignments.

Recently in 1992, the Ifeloju Local Government within the old Ibarapa District developed a service programme which empowers the Head of the University Department of Preventive and Social Medicine to designate and provide consultant and resident community physicians to act as honorary medical and assistant medical officers of health for the LGA, especially while local government finds it difficult to recruit and retain medical officers of health. It is hoped that this process may progress to involve other local government as well as state government services.

Conclusion

The Ibadan CBME, which started with the 1962/67 cohort of students, arose from the inability of traditional western medical education, based on traditional teaching hospitals, to produce doctors to meet the needs for health care of developing countries. The CBME encompasses both community medicine (the thrust of CBME), as well as primary medical practice or general/family medical care which is the main trust of community-oriented medical education (COME). It is similar in philosophy to the CBME and COME now arising in the technologically advanced countries. The main similarity lies in their attempt to direct physician-based health care to the more basic and holistic needs of man that are frequently not well addressed by high technology and over expensive medicine.

As the oldest model of CBME known to us, and with the continuing evaluation that has attended it, the programme has done fairly well and deserves to be known and explored for adoption by others. However, the final test is the extent to which the programme has produced doctors whose ultimate specialisation, career, and service continue to meet these objectives, as compared to graduates from other systems. That evaluation constitutes the final part of the present set of studies on the Ibadan CBME, of which this paper is the first.

References

Adetuyibi, A. Anyaechi, R.I.K., Eke, R.A., & Essien, I. (1965). Report of a community health study of Ibarapa District. *Journal of the Nigerian Medical Association, 2 (2)*, 192-197.

Asuzu, M.C. (1989). The influence of undergraduate clinical training on the attitude of medical students to rural practice in Nigeria. *African Journal of Medical Science, 18*, 245-250.

Asuzu, M.C., & Bassi, A.P. (1992). The Nigerian community health officers (CHOs) and the service needs of primary health care. *Annals of Community-Oriented Education, Vol. 5*, 47-54. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences

Awojobi, O.A., Fayonjuola, A.A., Awe, T.A., & Adeniran, D.K. (1985). Letter: Intravenous normal saline preparation: A district hospital experience. *Nigerian Medical Practice, 10*, 119.

Awojobi, O.A. (1987). Surgery in Nigerian rural health care delivery: The Ibarapa experience. *Nigerian Medical Practice, 13*, 49-51.

Bomba, W.G. (1987). *Effect of a rural community health posting on medical students knowledge of the health education aspects of primary health care.* MPH dissertation. Department of Preventive and Social Medicine, University of Ibadan, Ibadan, Nigeria.

Brown, A. (1961). Medical education in Nigeria. *Journal of Medical Education, 36*, 1036-1041.

Clarke, D.W. (1981). A vocabulary for preventive and community medicine. In: D.W. Clarke, & B. MacMahon (Eds.). *Preventive and community medicine* (second edition). Boston, MA: Little, Brown and Company.

Department of Preventive and Social Medicine, College of Medicine, University of Ibadan. (1985). *MB, BS, programme posting manual 1-50.*

Department of Preventive and Social Medicine, University of Ibadan. (1988). *25 Years of the Ibarapa programme.* IV, 255.

Gilles, H.M. (1965). Teaching of preventive medicine in the tropics. *The Lancet, 2*, 280.

Ogunlesi, T.O. (1965). The Ibarapa project: A new look at Ibadan. *Journal of the Nigerian Medical Association, 2*, 168-172.

Omotara, B.A., Asuzu, M.C., & Padonu, M.K.O. (1991). Dynamics of medical students career and medical specialty choices, and their implications for medical education in developing countries: A Maiduguri Medical School study. *East African Medical Journal, 68 (7)*, 547-554.

Saad, I. (1967). The Ibarapa posting: Facts and fictions. In: University of Ibadan, Ibarapa Project Bulletin, 3, 6-8. *Students at Igbo-ora.* Ibadan, Nigeria: Ibadan University Press.

Schram, R. (1971). *A history of the Nigerian health services.* Ibadan, Nigeria: Ibadan University Press.

University of Ibadan. (1967). Explanation of the programme of teaching in October-November 1967. In: University of Ibadan, Ibarapa Project Bulletin, 3, 16-17. *Students at Igbo-ora.* Ibadan, Nigeria: Ibadan University Press.

University of Ibadan, Faculty of Medicine. (1976). *Prospectus 1976-77*, 151-152. Ibadan, Nigeria: Ibadan University Press.

Annals of Community-Oriented Education
1993, Vol. 6, 83-87

Ogun State University COBMES Programme: Progress, Prospects and Problems

Akin Osibogun and Olanipekun Alausa
Ogun State University
Sagamu, Nigeria

Abstract

The Ogun State University's College of Health Sciences was established in 1983 when Primary Health Care had already been established at Alma Ata, 1978 as an appropriate strategy towards achieving Health for All by the Year 2000, but when only a few medical schools had adapted their curriculum to the new challenge. The paper reports progress and discusses difficulties and as yet unresolved problems.

The historical background has been partly responsible for the excessively curative nature of the Health Services in Nigeria, at least up till 1986 (Osibogun, 1989). This same background influenced the training of doctors to the extent that the first set of students of the premier Nigerian institution, the University of Ibadan Medical School, received their clinical training at the University of London (Schram, 1971).

With the adoption in 1986 of a national health strategy, based on the Primary Health Care approach, there is no further doubt as to the need for innovation in medical education to produce doctors who can implement that strategy (Osibogun, 1989; Federal Ministry of Health, 1986).

Because of the foresight of its founding fathers, the Ogun State University's Obafemi Awolowo College of Health Sciences was established in January, 1983 as a community-oriented medical school to produce doctors who would be well equipped and motivated to practise in rural or urban settings in the country.

The College has its pre-clinical departments at Age-Iwaye in Ljebu North Local Government Area of the State, while the clinical departments are sited with the Teaching Hospital at Sagamu, some 55 kilometers away.

Through commitment to excellence and innovative medical education, the College has been able to gain accreditation by both the National Universities Commission and the Medical and Dental Council of Nigeria. At present, it is the only state-owned medical school in the country with this status. All other accredited medical institutions are federally owned.

Requests for reprints should be sent to A. Osibogun, Ogun State University, Obafemi Awolowo College of Health Sciences, P.M.B. 2001, Sagamu, Ogun State, Nigeria.

The Community-Based Postings

As described by Alausa and Oluwole (1991), the Community-Based Medical Education programme of the College initially placed emphasis on Primary Health Care Services. However, because of the University's commitment to relevant medical education, the programme has moved rapidly to include secondary and tertiary health care.

At this stage, it is important to distinguish COBMES (Community-based medical education and service) postings from other specialty postings which may also take place outside the Ogun State University Teaching Hospital, e.g. Orthopaedics at the National Orthopaedic Hospital, Lagos, and Psychiatry at the Neuro-Psychiatry Hospital, Abeokuta. These specialty postings take place at tertiary health care centres, while COBMES postings are at primary and secondary care centres. This agrees with what Hamad has advocated (Hamad, 1991).

During the first one-and-half years of the medical school programme, the students are based in the Faculty of Basic Medical Sciences in Age-Iwaye. This includes a five week community-based posting when the students carry out a community health diagnosis in selected communities.

The second posting takes place during the second clinical year for a total of twenty-six weeks. Ten of the twenty-six weeks are spent within the Remo Local Government Area in health services research with individual and group projects, as well as in the provision of supervised community health services, such as childhood immunisation and health education campaigns. The remaining sixteen weeks are spent in various secondary care health facilities within the State but outside the Remo Local Government Area. Each student undertakes a posting in medicine, surgery, paediatrics, and obstetrics and gynaecology in these facilities.

The posting in the secondary health care centres (state hospitals) involves specialists in the respective fields who are qualified for appointments to the medical school as lecturers but who chose to practise at that level for personal reasons. They are appointed as field faculty staff (associate lecturers). The students thus work with patients who are managed by specialists in facilities with less sophistication than the traditional teaching hospital or tertiary health care facility which are available to our students at Sagamu.

Finally, in their last year, the students spend four weeks in Ijebu-North and Remo Local Government Area in a Primary Health Centre where they assume more responsibility for patient welfare by examining, diagnosing and treating common medical conditions with referrals as appropriate. Students also design intervention programmes for identified community health problems, e.g. nutritional health talks to reduce prevalence of protein malnutrition.

The coordinator is responsible for arranging student accommodation in the various towns, as well as transportation to and from Sagamu and from temporary hostels to various health facilities. The coordinator also liaises with field and college staff for the conduct of teaching and assessment, as well as health systems research.

The coordinator enjoys the status of a head of department in the College and is the chairman of the Logistic Sub-committee of the COBMES Programme. This sub-committee consists of academic representatives of all heads of department in the College. Members of the committee ensure adequate input from their department into the planning and implementation of each posting.

Impact on the Communities and Medical Education

The programme has succeeded in giving the students practical experience at primary and secondary health facilities, in addition to tertiary health care in the teaching hospital.

This broadens the clinical experience of the students. Opportunities for health services research are also available to both the students and their teachers. The findings of the students' investigations are being forwarded as recommendations to appropriate government authorities.

Clinical students, who are posted to secondary health care facilities, carry out duties on the wards and in emergency treatment rooms under close supervision by resident doctors where they undertake simple services such as suturing of lacerations, episiotomy incisions, and drainage of abscesses. Their participation relieves the medical officers, and patients are seen more quickly.

At the State Hospital in Ijebu-Ode, where there is normally no Consultant Physician, a Consultant Physician from the Department of Internal Medicine of the Medical School has started weekly specialist clinics and thus provides the only consultant services in Internal Medicine for the whole of the Ijebu Health Zone of Ogun State. These clinics provide an important service to the community, as well as training for our students.

At the various participating centres, clinical meetings and grand rounds are arranged on a monthly basis. The students make case presentations and participate in discussions on topical medical issues under the guidance of both medical school staff and "field faculty". "Field-based faculty" serve as realistic role models for the students (Urbina et al., 1991). The Ogun State University Medical School has found such "field faculty" very useful and has formally appointed eight at various health centres and hospitals as associate lecturers to the College. The associate lecturers usually possess postgraduate qualifications, and are assisted by medical officers, medical registrars and house officers. Interaction between medical school staff and "field faculty" ensures a continuous exchange of ideas and prevents professional isolation. The monthly clinical meetings and grand rounds also provide continuing medical education for residents, medical officers, and house officers. Of particular importance is the collaboration between the Ode-Remo Community and the College of Health Sciences. The members of the community on their own initiative and through their Ode-Remo Development Council constructed a sixteen bed health centre with facilities such as a mini-theatre. This collaboration has resulted in the ambitious Ode-Remo Community Health Project which is a good example of community-university partnership in a health project.

Problems and Unresolved Issues

Community-based medical education is definitely not a cheap programme. It involves a lot of careful planning, communication within and outside the University, as well as student transportation, accommodation and general welfare. Although the long-term benefits of the programme far outweigh the cost, it may require a lot of effort to convince some university administrators of the need for priority funding of such a programme.

The argument that has to be put forward is that universities can only be relevant if they address the needs and problems of the larger society. The Ogun State University's COBMES Programme is a positive attempt at making the medical school and its products highly relevant to the 3 million people of Ogun State Community and Nigeria in general. Services such as continuing medical education for medical officers, health services research, and contributions to individual patient care must be seen as the contributions of the University to the community. University administrators must, therefore, be more generous in allocating resources, including a project vehicle.

The further issue that requires attention is the format of assessment in community-based postings.

The final overall assessment of students includes COBMES posting 10%, in-course examinations 10%, log book/attendance 10%, and final examinations including written, oral, clinical and practical 70%.

The majority of graduates are likely to work in institutions other than the teaching hospital. It is, therefore, desirable to train them in the environment in which they will work. It may also be desirable that the assessment of their performance in that environment should constitute a larger score in their overall/final assessment. Alternatively, it should be a requirement that students must pass the COBMES assessment before being allowed to graduate.

As an innovative approach to medical education, community-based medical education will require innovative assessment methods that emphasize skills, attitude and ability to provide community-relevant service.

In order that the students may fully benefit from their experiences, there is a need to organise retraining sessions for medical teachers in community-oriented institutions. New teaching and learning methods have to be discussed and understood.

Conclusion

Medicine is a conservative profession, and it is no surprise that only four of the fourteen medical schools in Nigeria have fully embraced the concept of community-oriented medical education - the medical schools in Sagamu, Ilorin, Ile-Ife and Kano.

References

Alausa, O.K., & Oluwole, A.F. (1991). Community-based medical education and primary health care implementation: Experience of Ogun State University Medical School, Nigeria. *Annals of Community-Oriented Education, Vol. 4,* 91-94. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Federal Ministry of Health. (1986). *National health policy and strategy to achieve health for all Nigerians.* Lagos, Nigeria: Federal Ministry of Health.

Hamad, B. (1991). Community-oriented medical education. What is it? *Medical Education, 25, 16-22.*

Osibogun, A.O. (1989). *Community health and community physicians in Nigeria: A profile study.* Project Report. Sagamu, Nigeria: National Postgraduate Medical College of Nigeria.

Schram, R. (1971). *A history of the Nigerian Health Services.* Ibadan, Nigeria: Ibadan University Press.

Urbina, C., & Kaufman, A. (1991). University-community partnerships: The needed innovation. *Annals of Community-Oriented Education, Vol. 4,* 9-18. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Annals of Community-Oriented Education
1993, Vol. 6, 89-95

Community-Oriented Medical Education in Japan and the Wakuya Project

Masaji Maezawa and Hiroyuki Wakamatsu
Wakuya Medical and Social Services Center
Miyagi, Japan

Abstract

Japanese life expectancy is now the longest in the world. In the next century, the growth rate of the elderly population in Japan will be higher than in any other country. However, education in community and primary care are only slowly being developed in Japanese medical schools.
Kawasaki, Jichi and Saga Medical Schools were started with primary care education. They do not always provide the essential contents, their departments of social medicine offer medical students community-oriented curricula.
The Wakuya Project was planned for community-oriented, comprehensive care education. The content of the Wakuya Project and the clerkships at Wakuya Medical and Social Services Center are here presented.

Introduction

Japan has become the world's healthiest country; average life expectancy is now the longest in the world (male 75.9 years ; female 81.8 years in 1989). Economic prosperity and medical insurance measures have improved access to medical care, and technical innovation has changed the methods of medical treatment. However, this progress and the decline of the birth rate have accelerated the growth rate of the elderly population in Japan.

The Ministry of Health and Welfare is responsible for planning national health policy for the aging society. It is essential for medical students to study family practice, geriatrics and community services (Kiikuni, 1983 ; Ishibashi, 1987). The Japan Society for Medical Education has promoted primary care education (Committee on Undergraduate Education, 1987, 1991). However, change in medical education in Japan is slow; only a few schools provide education in primary care and community-oriented education in Japan.
This paper reports on unusual community-oriented medical education and on the trial in Wakuya community involvement.

Primary Care Education

There were 46 medical schools in 1969, and the number increased to 80 by 1980. Kawasaki Medical School was established in 1970. The fragmentation of the profession and the

Requests for reprints should be sent to Masaji Maezawa, Wakuya Medical and Social Services Center, 278, Nakaeminami, Wakuya-cho, Tooda-gun, Miyagi 987-01, Japan.

emphasis on technology caused this school to include a new department, the Department of Primary Care Medicine. It was the first such department in Japan. It has an outpatient clinic and an inpatient ward. Both are in the big Kawasaki Medical School Hospital. The core curriculum included doctor-patient communication, psychosomatic medicine, teamwork, and management of common diseases (Tuda, 1984). However, as this education was hospital-based and not community-based, home care services have been added, and a clinic is to be provided in a rural community.

Jichi Medical School was established in 1972 with the aim of producing humane and competent doctors to work in rural areas. This school was sponsored by all the local governments of Japan. School fees are paid as loans for all students, and they are exempt from repaying these fees when they complete their work over a period of nine years after graduation at public hospitals or clinics, appointed by the governors of the prefectures. Jichi Medical School set up its Department of Community and Family Medicine in 1981, and the members of this department opened a clinic, the Community and Family Practice Center, with community-oriented primary care as its guiding concept (Kark, 1981 ; Nutting et al., 1985). The defined community has 1,800 people. A few physicians and one public health nurse from this centre provide ambulatory care, home visits and health education for the inhabitants. Physicians are always on call, if necessary by telephone. Clinical clerkships for the students were started at this centre in 1983 (Maezawa, 1984 ; Ishibashi et al., 1985). Almost every graduate of Jichi has completed his/her tours of duty in the various prefectures.

Saga Medical School Hospital has also had a general ambulatory clinic since 1981. The Ministry of Education recognised it as the first such unit of a national medical school; it is similar to general internal medicine in the United States. The faculty staff of this unit does not provide community-oriented education. Table I. provides a comparison of hospital-based and community-oriented primary care clerkships at three different medical schools.

Community-Oriented Education in Social Medicine

Primary care education by clinical departments is slow in its development. However, several departments of social medicine are engaged in community-oriented education for medical students.

The faculty members of the Department of Environmental Medicine, Shimane Medical University, have set out to enhance the importance of family and community health care (Yamane et al., 1982 ; Yamane et al., 1985 ; Yamane et al., 1991).

The Department of Medical Care Administration, Kagawa Medical School takes students to clinics in rural areas or on small islands. There they instruct medical students in home visits, care for patients with common diseases, and health care for the local population.

Table I. Comparison of primary care clerkships at three medical schools

Contents	A*	B*	C*
Accessibility			
temporal	-	+	+
spatial	-	+	-
economic	+	+	+
psychological	+	+	+
Comprehensiveness			
age, sex	-	+	+
all specialties	-	+	+
psychosocial	+	+	+
prevention	-	+	-
home visits	+	+	-
Coordination			
medical specialists	-	-	+
health professions	-	+	-
local government	-	+	-
inhabitants	-	+	-
Continuity			
health records	-	+	-
family-oriented	-	+	-
Accountability	+	+	+

* A: hospital-based primary care education (PCE). B: community-oriented PCE. C: general internal medicine education by multidisciplinary team.

In Toyama Medical and Pharmaceutical University medical students are offered early experiences in caring for the aged in nursing homes and for handicapped children as part of their education (Matsubara et al., 1991).

All these medical schools are new schools and established after 1970. It is difficult to improve medical education in old, traditional medical schools where research takes priority over education.

Wakuya Project

The Wakuya Medical and Social Services Center is the main facility for providing health, medical and social services for the town's people. This section reports on the practice of comprehensive services for the people of the town of Wakuya and on its community-oriented clerkships.

Wakuya Town is located 50 km northeast of Sendai city. It is an agricultural town with a population of 21,000. The number of people 65 years or over is about 3,100 (14.7% of the population). The main causes of death in the town are cancer and cerebrovascular disease. The mortality due to cancer tends to increase and that due to cerebrovascular disease tends to decrease.

Origin of Wakuya Medical and Social Services Center. Inhabitants of Wakuya had been waiting for a community hospital in their own town for 20 years. Hachiro Honma, Wakuya town mayor, thought his political responsibility was to protect the property and life of his townspeople. When he won his first elect as town mayor he planned a community hospital. His planners studied several hospitals which had a significant role in community practice. They concluded that future hospitals should provide not only medical care but also health care and community services for the elderly.
In 1987 the Ministry of Home Affairs invited local governments to submit plans for looking after elderly people. Wakuya town applied to the Ministry, and the plan "Action by the town by building health and social services" was adopted. The Wakuya Medical and Social Services Center was established in November 1988.

Principle of the Center. Each resident of the town can achieve self-fulfillment through being born peacefully, growing healthily, working cheerfully and aging harmoniously. The staff of the centre can assist, but the main responsibility rests on the people themselves:
" Individuals should be responsible for their own health."
"The family should share in this role."
"In the community people should help each other."
These sentences mean self-care, family-care and community-care, and they guide the towns' people.

Activities of the Center. It has three divisions, health care, medical practice and social service. Case conferences and regular meetings link these divisions together for health promotion, medical and life-style checkup, medical practice, leading a meaningful life, and terminal care (Fig. 1).
The health care division educates lay persons elected from about 20 families. They act as mediators for information about health and social services between the town's people and the health care division to identify health problems in the community and to plan health education classes in the community. They are supported by seven public health nurses.

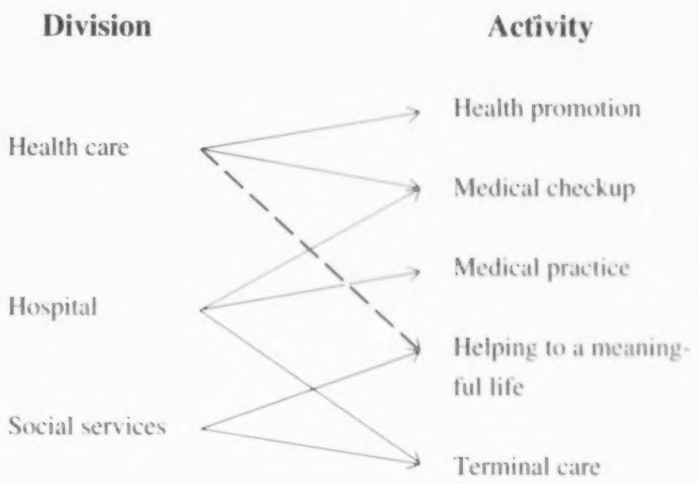


Figure 1. Organisation and activities of the Wakuya Medical and Social Services Center

The medical practice division has a public hospital with 100 beds. The staff of this division, with 7 doctors and some 50 nurses, provide clinical preventive services for outpatients, inpatients and their families.

The social service division provides home care, day care services and short stay services. Home care is provided by 5 visiting nurses, 9 home helps and one social worker. The nurses undertake approximately 200 home visits per month. Each day some 10 elderly people with various disabilities receive day care. The staff of the social service division coordinates short- and long-stay arrangements in nursing homes.

Evaluation of Comprehensive Health Services

It is difficult to evaluate the result of comprehensive health services for the elderly. In Wakuya the percentage of those who die at home is increasing. Institutional accommodation for disabled elderly have been changed in favour of homes with direct access from neighbours and health professionals. It has become possible to support continuity of patients' normal life style and their own decisions for terminal care. Medical expenses for the elderly have hardly changed, but total medical expenses of National Health Insurance are on the decrease.

Clerkships at the Wakuya Medical and Social Services Center

Clerkships for medical students of Tohoku University and Tsukuba University have been offered since 1990. Tohoku University sends fourth year students for social medicine clerkships, and Tsukuba University sends sixth year students for an elective off-campus clinical clerkship. The objectives of Wakuya clerkships are shown in Table II.

Students, who have participated in Wakuya clerkships, felt that the community care experience was most valuable, especially working with visiting nurses and home-helps, but that the clerkship was too short.

Table II. Educational objectives of the Wakuya clerkships

Knowledge

1. Explain the concept of community-oriented primary care
2. Explain the methods of community diagnosis
3. Explain the roles of public health nurses, visiting nurses, home helps, social workers, physical therapists, and occupational therapists

Skills

1. Take a history that is normally complete, accurate and systematic
2. Perform a complete and systematic physical examination
3. Build a good relationship with people in the community
4. Demonstrate sensitivity to the needs of the community

Attitude

1. Be interested in the daily life of the underprivileged
2. Have motivation to solve problems using biopsychosocial information
3. Feel sympathy towards other health professionals

Conclusion

Education of primary care and community-oriented health care in Japan is behind that of other countries. A few medical schools have established departments of primary care, while departments of social medicine provide community-oriented education. The Wakuya project sets out to provide medical students with community-oriented, comprehensive education making use of health workers and social service staff other than medical doctors. To respond to the health needs of the community, Japanese medical education will require the following innovations:

1. Increase community-oriented primary care training in medical schools.
2. Encourage the establishment of departments of primary care through government financial incentives for medical schools.
3. Make use of health profession and social service staff, other than medical doctors, for the clerkships.
4. Teach medical students the importance of comprehensiveness and continuity in health care systems.

References

Committee on Undergraduate Education, Japan Society for Medical Education (1987). A "primary care course" curriculum in undergraduate medical education (a tentative plan). *Medical Education (Japan), 18*, 72-75.

Committee on Undergraduate Education, Japan Society for Medical Education (1991). A "primary care course" curriculum in undergraduate medical education (a revised plan). *Medical Education (Japan), 22*, 242-248.

Ishibashi, Y. (1987). Why is family medicine needed in Japan? *Journal of Family Practice, 25*, 83-86.

Ishibashi, Y., Arakawa, Y., & Maezawa, M. (1985). The clinical clerkships of primary care. *Japanese Journal of Primary Care, 8*, 103-110.

Kark, S.L. (1981). *The practice of community-oriented primary health care.* New York, NY: Appleton-Century-Crofts.

Kiikuni, K. (1983). Family practice in Japan. In: J.P. Geyman, & J. Fry (Eds.). *Family practice: An international perspective in developed countries.* New York, NY: Appleton-Century-Crofts.

Maezawa, M. (1984). New trial of primary care education. *Japanese Journal of Primary Care, 7*, 266-268.

Matsubara, I., Kagamimori, S., Naruse, Y., & Otani, H. (1991). Effects of social welfare practice on beginning medical students. *Medical Education (Japan), 22*, 3-8.

Nutting, P.A., Wood, M., & Connor, E.M. (1985). Community-oriented primary care in the United States: A status report. *American Journal of Public Health, 253*, 1763-1766.

Tuda, T. (1984). Undergraduate and graduate education for primary care in Kawasaki Medical School. *Japanese Journal of Primary Care, 7*, 247-251.

Yamane, Y., Yoshida, N., Nakagawa, A., Makino, Y., Tada, M., Kamata, T., Fukuzawa, Y., Kishimoto, T., & Okada, N. (1982). Experience with new community-based curriculum in environmental medicine. *Medical Education (Japan), 13*, 389-394.

Yamane, Y., Yoshida, N., Nakagawa, A., Abe, K., Fukushima, T., Itagaki, K., & Okada, N. (1985). Family health practice and applying the problem-oriented system to preventive medical education. *Medical Education (Japan), 16*, 384-393.

Yamane, Y., Shiwaku, K., Yoshida, N., Abe, K., Fukushima, T., Okamoto, T., Isobe, A., Tada, M., Fukuzawa, Y., Kishimoto, T., & Abe, M. (1991). The educational practice and the evaluation of health care for the elderly in a community where the ageing population has been increasing. *Medical Education (Japan), 22*, 71-76.

Annals of Community-Oriented Education
1993, Vol. 6, 97-113

Learning the Basics of Medicine in General Practice in the Faculty of Health Sciences, Linköping, Sweden

Mats Foldevi and Erik Trell
University of Linköping
Linköping, Sweden

Abstract

Although general practice provides basic health care in the community it contributes disproportionately little to medical education, especially undergraduate education. The new problem-based medical curriculum of the Faculty of Health Sciences in the University of Linköping, with integration of preclinic and clinical medicine, has increased the involvement of general practice quite remarkably. General Practitioners (GPs) take part in all eleven semesters of the curriculum. With a problem-based undergraduate medical curriculum it is of vital importance that students face common and significant health problems in the community and become familiar with general practice. All undergraduate students at Linköping encounter general practice during their communication skills training in the first five semesters and then in the three week recurrent clinical clerkships in general practice in semesters six to ten. This large and new task is carried out successfully through the extensive contribution made by the GPs in the county. This paper describes the contributions, made by general practice to the Linköping undergraduate medical curriculum and identifies aspects that will benefit from further improvement.

Introduction

Medical knowledge and medical care have developed with accelerating speed in recent decades. With the increasing ability to treat severe and advanced diseases, combined with sub-specialised and technically advanced hospital care, more and more of the common health problems are not represented in the wards but are found in ambulatory care. Despite the advances in medical knowledge and therapy, medicine has not been able to solve the major health problems, mainly because they require change in patients' lifestyle, an area in which we still lack knowledge and competence. Also, it is difficult for students to study the natural history of diseases, as patients' stay in hospitals is drastically reduced due to the escalating cost of hospital care.

In recent years general practice has come to be considered an essential tool to achieve the goals of modern health care: basic medical care, prevention, health promotion and the attainment of Health for All by the Year 2000 (WHO, 1986).

There has been a considerable development in the involvement of general practice in undergraduate education, since the Undergraduate Education Committee of the Royal

---

Requests for reprints should be sent to M. Foldevi, Faculty of Health Sciences, General Practice Unit, Department of Community Medicine, Linköping, S 58185 Sweden.

College of General Practitioners of Britain (Barber, 1953) recommended that all students should be given an insight into general practice and that the medical schools should co-opt General Practitioners (GPs) to take part in teaching. However, there is still a great gap between today's undergraduate education and every day medical care, both in practice and in content (Fraser, 1991). We know that most health problems can be diagnosed and resolved without advanced technology but not through doctors who are unable to communicate with patients. Although university departments of general practice are young and work with a very small staff, and GPs are not used to take part in undergraduate education, there is an increasing awareness that many important health problems are best seen and studied in general practice (Fraser, 1991; Oswald, 1989; Iliffe, 1992).

The situation in Sweden has been similar to that described in the report from the Royal College of General Practitioners (Fraser et al., 1988); general practice is sparsely represented in the curriculum compared with the major specialties in the clinical phase. As the British academic departments reported, there is a need for more involvement of general practice in undergraduate education (Fraser et al., 1988).

General Practice in Sweden

The county local government is responsible for general practice, also financially. General practice is organised in Primary Health Centres (PHC) each responsible for basic medical care in a defined geographical area.

A PHC usually has 3 to 8 GPs, as well as district nurses, physiotherapists and sometimes midwives and occupational therapists. All GPs are public servants within the county. A GP is usually responsible for the primary health care of 2000 to 3500 inhabitants. The PHC is usually organised in health care teams, each consisting of 1 to 2 GPs with 2 to 3 district nurses and 1 or 2 nurse assistants.

The GP's day is dominated by out-patient clinics with a mixture of acute and chronic health problems. Home visits are rather few and mostly to elderly patients with chronic diseases. The GP is also concerned with child health care and sometimes with maternal health care. This model is now in the process of extensive change to a design which is influenced by British general practice with smaller centres where GPs run their own practices with a list of patients and financial resources based on performance.

The aim is to expand the number of GPs by developing a model that will attract more doctors into general practice, and to develop general practice itself.

The Linköping Medical Curriculum

When the Faculty of Health Sciences (FHS) of Linköping was established in 1986, it was designed to educate doctors for the twenty-first century. The new programme adopted problem-based learning (PBL) as the best educational method available. This approach to learning uses realistic problems as stimulus for learning (Barrows et al., 1980; Engel, 1982). Clinical reasoning skills are also developed (Barrows et al., 1980), as well as the student's ability for self-directed learning for subsequent adaptation to further developments in medical care. Another advantage of PBL is that it facilitates integration between theory and practice, between basic and clinical sciences. General practice is well suited to this method, as the working-style of the GP is problem-oriented and cross-disciplinary, with an emphasis on common health problems in the community.

Another important aim of the new curriculum is to enhance the quality and quantity of the training in the most important basic skill of the doctor - to create and maintain a good doctor-patient relationship.

However, GPs lack a tradition of, and experience in teaching students, partly due to the relatively recent development of general practice as a scientific discipline. While there are several medical schools which have adopted problem-based learning and conduct community-oriented courses, Linköping, as Newcastle in Australia (Reid, 1979), has created a curriculum that involves general practice throughout the programme in a unique and innovative way. The new curriculum gives GPs an extensive responsibility for the students' education. The paper describes undergraduate education in general practice, where the first generation of students has now completed the eleven-semester curriculum. This makes it possible to summarise the acceptability of this aspect by the students as well as the GPs.

The FHS is a unique organisation, a union of the University with the County Council of Östergötland (400,000 inhabitants), so that every public institution for health care in the county is a part of the University. The University admits 30 students[1] each semester (twice a year) into the 5 and a half years undergraduate education programme.

The most important characteristics of the medical programme are:

problem-based learning; ntegration of human biology with clinical medicine; integration between different programmes[2]; early patient contact; focus on common health problems; an holistic approach; and emphasis on prevention and health promotion.

In this context general practice has been given an extensive role in the programme.

The Contribution of General Practice

Figure 1 shows the curriculum with the most important contributions from general practice. It starts with a 10-week course called Man-Society, with the main objective to increase the students' understanding and knowledge of the factors that influence human health.

This course is common for all programmes [2] in the FHS. Problem-based learning is introduced to the students and practised in small groups with a tutor for each group, which consists of students from the six programmes. Three of the eighteen tutors are medically qualified, mostly GPs. These GPs are involved in the examination by selecting problems for the written examination.

---

[1] In the autumn of 1991 this was increased to 40 students twice a year.

[2] The FHS offers the following programmes: general nursing, medical laboratory technology, rehabilitation (physical therapy and occupational therapy), community care, medicine.

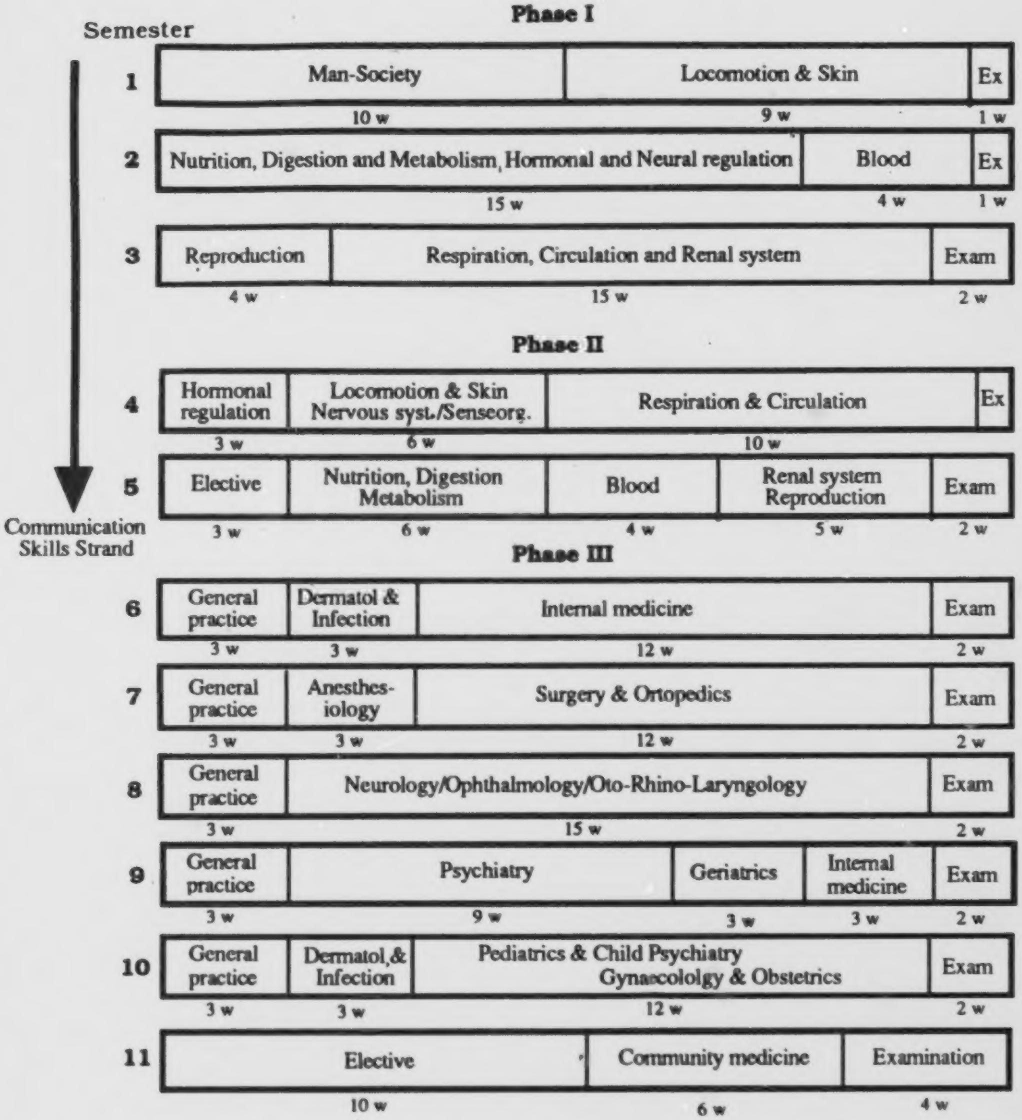

Phase I
Semester
1
Man-Society
10 w
Locomotion & Skin
9 w
Ex
1 w
2
Nutrition, Digestion and Metabolism, Hormonal and Neural regulation
15 w
Blood
4 w
Ex
1 w
3
Reproduction
4 w
Respiration, Circulation and Renal system
15 w
Exam
2 w
Phase II
4
Hormonal regulation
3 w
Locomotion & Skin Nervous syst./Senseorg.
6 w
Respiration & Circulation
10 w
Ex
5
Elective
3 w
Nutrition, Digestion Metabolism
6 w
Blood
4 w
Renal system Reproduction
5 w
Exam
2 w
Communication Skills Strand
Phase III
6
General practice
3 w
Dermatol & Infection
3 w
Internal medicine
12 w
Exam
2 w
7
General practice
3 w
Anesthesiology
3 w
Surgery & Ortopedics
12 w
Exam
2 w
8
General practice
3 w
Neurology/Ophthalmology/Oto-Rhino-Laryngology
15 w
Exam
2 w
9
General practice
3 w
Psychiatry
9 w
Geriatrics
3 w
Internal medicine
3 w
Exam
2 w
10
General practice
3 w
Dermatol,& Infection
3 w
Pediatrics & Child Psychiatry Gynaecololgy & Obstetrics
12 w
Exam
2 w
11
Elective
10 w
Community medicine
6 w
Examination
4 w

Figure 1. The medical curriculum of the Faculty of Health Sciences

The strand

In the five semesters a total of 25 GPs is engaged in the training in communication skills called the "Strand". This name was selected as it represents an indispensable part of the students education. The objectives of the Strand are set out in Table I.

Table I. Objectives of the Communication Skills Strand

You (the student) should be able to:

* recognise your own reactions in relation to the patient and understand, analyse and revise them;

* recognise the patient's reaction to illness, disease and care, as well as understand and analyse these from a holistic point of view;

* observe and understand the importance of the interaction between body, psyche and environment, such as family, work, leisure and society;

* practise a therapeutic attitude with patients;

* establish and develop a clinical relationship and treat a person in crisis.

Each new student generation is divided into five groups of 6-7 students. Each group is assigned to a particular GP at a Primary Health Centre in the county. The students remain in the same groups throughout the five semesters. Figure 2 shows the geographical distribution of the PHCs that are or have been participating in the Strand. Each GP is assigned to only one student group and stays with this group for the whole period of two and a half years. The student group comes to the PHC every second week for half a day. Each generation has different days, for example the twelfth generation of students goes to the PHCs every Thursday afternoon during even weeks. A few bigger PHCs in Linköping have had two groups attached at the same time, but groups from different generations of students and each with a different GP.

In the design of the half-day (Fig. 3) one of the patients who has made an appointment for a consultation at the PHC first meets two students. While one student talks to the patient the other student videotapes the consultation. When the patient is seen by the GP, the students are present and can thus compare their performance with that of the GP. The other students, who are not occupied with a patient, can perform other tasks at the PHC such as taking blood, record an ECG, study individually or familiarise themselves with the PHC. Finally all 6-7 students, the GP and a supervisor, who is competent in the behavioural sciences, meet to view the tapes and the students get prompt and mostly quite specific feed-

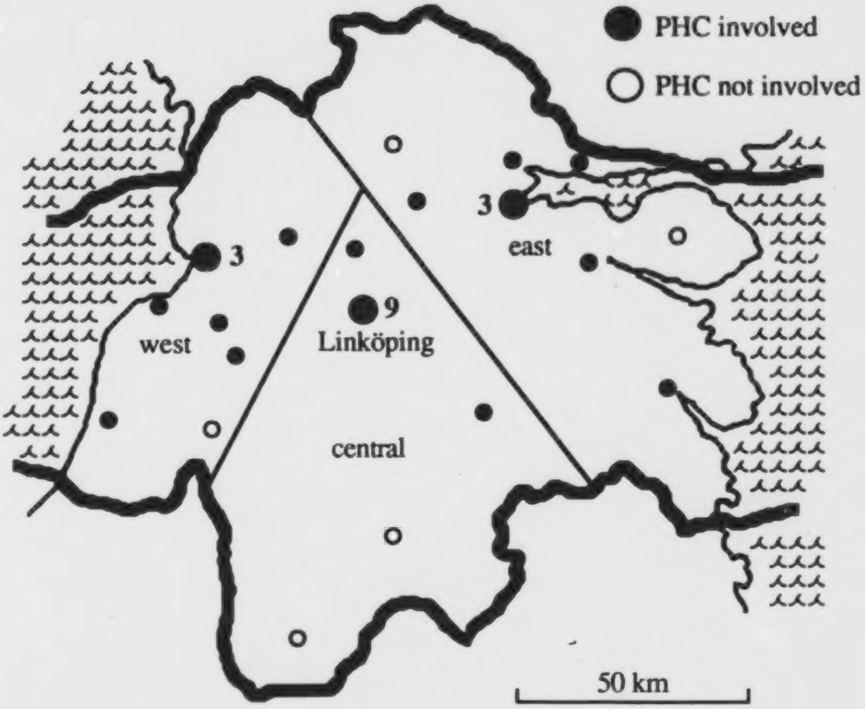


Figure 2. The county of Östergötland with all Primary Health Centres which participate in the Communication Skills Strand

back on their performance. The supervisors are usually social workers, psychologists or nurses, most of whom work in child and adolescent psychiatry or in general psychiatry. They are responsible for conducting the group discussion and supervising the students' training in therapeutic attitude and communication skills. The same supervisor stays with the group for the five semesters. The theoretical model for the consultation was developed by Wretmark (1984) from Kagan's Interperson Process Recall (1975).

The further task for the supervisor is to follow the student's individual development together with the GP and to discuss with the Strand coordinator any difficulties that may have arisen. The GP is responsible for the students' activities at the primary care centre and to select patients and to discuss with them that they will be seen by students. The GP also acts as a role model for the students, is available for questions from the students and is a resource during the group discussion. As the majority of consultations are preceded by a telephone call, the GP can select patients of different sex and age with appropriate problems, and who is able to give an adequate history, so that students have an all-round experience.

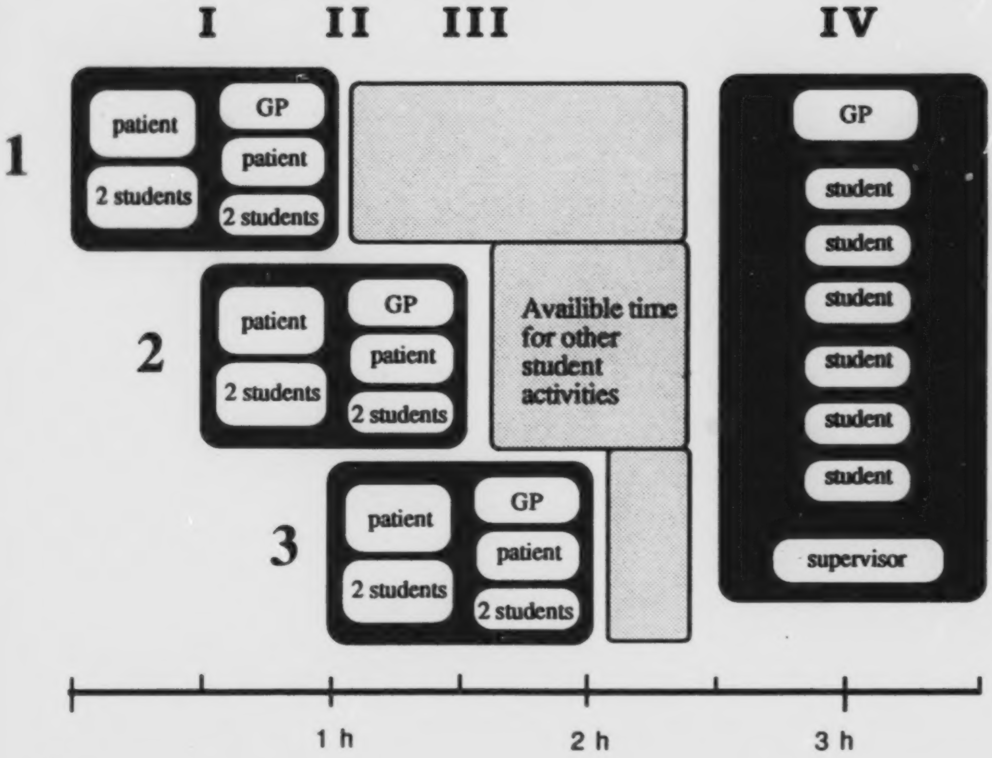

I
II
III
IV
1
patient
2 students
GP
patient
2 students
2
patient
2 students
GP
patient
2 students
Availible time for other student activities
3
patient
2 students
GP
patient
2 students
GP
student
student
student
student
student
student
supervisor
1 h
2 h
3 h

Figure 3. Organisation of a typical communication skills training session in the "Communication Skills Strand". This takes place every second week in the first two and a half years of the medical undergraduate curriculum

As the Strand extends across five semesters, the GP can select problems with increasing complexity, starting with relatively simple problems and progressing to acute problems and more challenging consultations, for example needing an interpreter.

Clerkships in general practice

During semesters 6 to 10, all students have a three week clerkship in general practice in each semester. During these clerkships the students attend one PHC for 2 semesters and another for 3 semesters, so that they experience one urban and one rural PHC.
These PHC are different from the one the students attended during the "Strand". Sometimes, however, a PHC will host a clerkship student and a Strand group of students at the same time. An example of student distribution for four PHCs is shown in Table II.

One GP is designated as the student's personal tutor and is responsible for the introduction, supervision and assessment of the student. The clerkships do not overlap, so that only one student attends a particular PHC at any one time.

Table II. Allocation of students for four different Primary Health Centres Autumn 1991, showing how students from different semesters attend these Centres in their clerkships and in the Strand for communication skills

Clerkship

PHC	Week	Semester	Student	GP/Tutor
Kärna	34-36	9	Katarina Bensch	Bo Palmqvist
	40-42	6	Lisbeth Brax	Karin Happastadius
	43-45	7	Mattias Hällje	Malin Gimstedt
	46-47	10	Veronica Johansson	Ann-Catrine Berglund
	48-50	8	Charlotte Bratthäll	Ulrika Jonforsen
Kungsgatan L	34-35	10	Stefan Backgård	Göran Forsberg
	37-39	7	Katarina Fängström	Göran Forsberg
	40-42	6	Lucia Kopparmark	Marie Henriksson
	46-48	9	Henrik Appelberg	Marie Henriksson
Torkelbergsgatan	34-36	6	Lisa Strömmer	Dag Domeij
	38-40	8	Helena Appelberg	Christel Aurelius
	43-45	9	Mara Kosovic	Ulla-Maija Ödman
	46-47	10	Tomas Svensson	Gundla Berg
	49-51	7	Åsa Törnqvist	Ulla-Maija Ödman
Skogsfrid	34-36	6	Bodil Paulsson	Göran Sommansson
	37-39	8	Helena Persson	Maria Tytor
	40-42	9	Lisa Swartling	Per Mattsson
	49-51	7	Tomas Hvitfeldt	Mats Foldevi

The Strand

PHC	Week	Semester	Day	GP/Tutor
Kärna	even	4	Thursday am	Ann-Catrine Berglund
Torkelberg	even	4	Thursday am	Gundla Berg
Kungsgatan L	even	2	Tuesday am	Marie Henriksson
Skogsfrid	odd	1	Wednesday am	Mats Foldevi
	odd	5	Thursday am	Göran Sommansson

At some PHCs the tutorship involves all GPs, at others fewer GPs participate. Today most PHCs have 3-5 clerkship students in each semester.
The clinical lecturer from the department of General Practice is the coordinator who is responsible for time tabling the students and for support and development of the clerkships.

The clerkship aims to develop basic skills in: interviewing, physical examination, record-keeping, management of common problems, team-work with other health professionals, consideration for the whole person and initiating and conducting preventive actions[3].
The clerkship involves all activities in general practice, including home visits, continuity of care, follow-up care, rehabilitation and co-operation with facilities in the community. The selection of patients (problems) depends on the objectives of the semester, on the student's learning needs, and local conditions. A list of common and for the student relevant problems seen in general practice is set out in Table III.

The student is always encouraged to relate the problems to the basic sciences and to pay attention to possible preventive actions and aspects of community-orientation[4].
The degree of student independence and the demands on the student increase with time. The student is encouraged to conduct an increasing number of consultations on his own. We emphasize the importance of giving the student time for reflection on his or her clinical experiences. To facilitate this, we have introduced a log-book in which the student summarises clinical contacts, skills practised and, perhaps most importantly, own learning-needs arising from working with specific patients. The role of the GP is partly that of a role model as a problem-solver, but predominantly to give individual feed-back and guidance.

Training-courses in tutorship for the GPs introduce the basics of problem-based learning and provide theoretical and practical training in tutorship. The coordinator of the clerkships used to recruit GPs personally. With increasing numbers of students in general practice and spread right across the county it has become increasingly more difficult for the coordinator to keep in direct contact with the PHCs. We have, therefore, assigned one GP in each of the three districts to become a "main tutor". These three GPs recruit and train new tutors, disseminate information from the Faculty, collect experiences and problems from the GPs and support them by visiting their centres.
The coordinator and the main tutors meet regularly to discuss problems and the development of the clerkships. At the end of each semester the tutors are invited to a meeting to discuss feed-back from the students', experiences of the tutors and further developments. The GPs also are informed about changes in the medical curriculum.

---

[3] Preventive action, e.g. advice on giving up smoking, diet, accident prevention, importance of exercise, immunisation.

[4] Community-orientation, e.g. is this a common problem in the community?, what kind of resources are available in the community to deal with this problem?, is it associated with social conditions?

Table III. Example of health problems faced by the student in General Practice

Semester	Problem	Skill
6	Infection	Examination Management Prevention
	Diabetes	Examination Management Team work
	Hypertension	Examination Management Team work
	Chronic heart disease	Examination Management Prevention
	Skin eruption	Management
7	Locomotor pain	Examination Management Team work Prevention
8	Hearing problem	Examination Management Prevention
9	Psychosomatic	Management Prevention
10	Disturbed child development	Examination Management

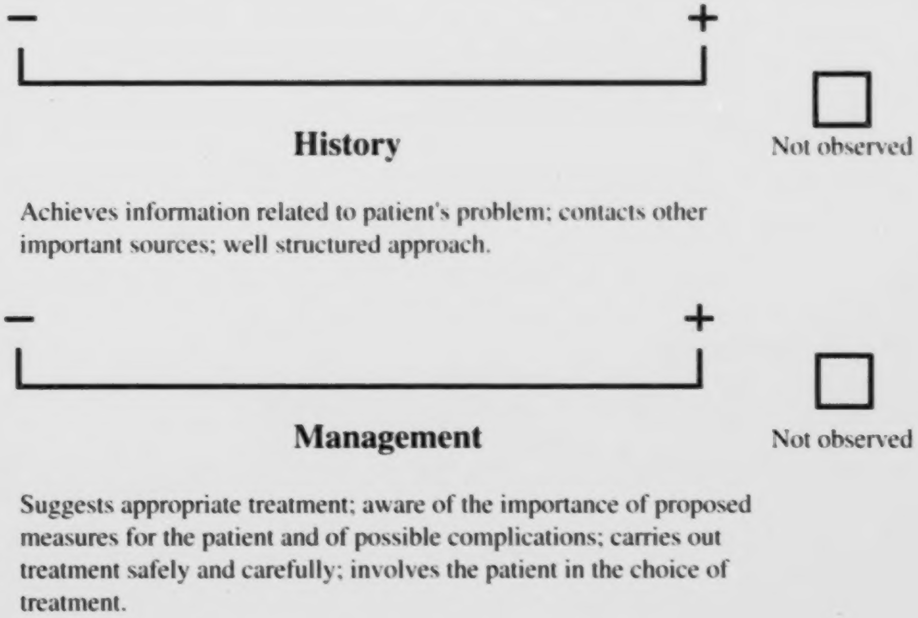
Community medicine

In semester 11, the curriculum ends with six weeks of community medicine. Here the focus is on health problems, health promotion and prevention at a non-individual level. Thehealth problems have been selected in cooperation with GPs. Examples of problems are; alcohol abuse, traffic accidents, occupational stress, assault and battery. The students also perform a task concerned with a health problem in a local community. This is undertaken in groups and uses epidemiological methods and analysis. Some of the tasks are supervised by GPs.

Assessment of students

Clerkship competence. A structured form for the assessment of students' competence in the clerkships has been developed based on a model from Newcastle University, Australia

(Saunders et al., 1982). This includes history, physical examination, investigation, diagnostic ability, manipulative skill, patient management, record keeping, knowledge, personal characteristics, conduct with patient, conduct with staff, and overall clinical competence. Each component of clinical competence is defined and linked with a Likert scale from "undeveloped" to "fully developed" (Fig. 4). The student and the tutor first fill in the form separately and then discuss the student's profile, development over time and any differences in judgement. These formative assessments are done at the end of most of the clinical clerkships. So far there has been no systematic training in how to assess students, and no analysis of reliability or inter- and intra-rater variability has been carried out. The form is thus used only to make the summing-up discussion between tutor and student more specific and more comprehensive for the student.



History

☐ Not observed

Achieves information related to patient's problem; contacts other important sources; well structured approach.

Management

☐ Not observed

Suggests appropriate treatment; aware of the importance of proposed measures for the patient and of possible complications; carries out treatment safely and carefully; involves the patient in the choice of treatment.

Figure 4. Examples of clinical competence in the assessment form. The Likert scale extends from "undeveloped" to "fully developed"

Phase-examination. The GPs, who are active in the Strand, participate in the phase-examinations at the end of semesters 3 and 5. These examinations have the same design as the Strand. The examination consists of three steps and is a revised form of the triple jump examination (Painvin et al., 1978) to assess communication skills, knowledge and self-directed learning. It starts with the student meeting a patient at the PHC; this meeting is videotaped by another student. The videotape is assessed by two examinators, a GP and a basic scientist. They use an assessment form with 8 items, each linked with a six point Likert scale: 1. establishes contact, 2. opens consultation, 3. listens, 4. directs the consultation, 5. formulates open questions, 6. responds, 7. closes the consultation, 8. considers the whole person.

The performance is summarised on a six-point scale; the student has to be judged at least "three" on the six-point scale in order to pass the examination. This test is followed by an oral examination of knowledge and theoretical reasoning based on the patient's problem. In the final step the student formulates a learning task and has four hours to complete it, using all available resources. The most frequently used resources are databases, such as Medline and Index Medicus at the Library of the FHS, and resource persons in hospital and preclinical departments. The outcome is presented to the examiners who assess the result and the way in which the student has acquired and assimilated the new knowledge.

These oral examinations have not yet been structured with predetermined questions and by defining satisfactory (model) answers. As such assessments tend to have high construct validity but low reliability (Neufeld et al., 1985), this examination is only judged as "approved" or "not approved".

Semester-examination. GPs are involved in examinations in semesters 6, 7, 9 and 10, mostly by using their patients as models for problems in written examinations in the form of Modified Essay Questions (MEQ) for assessing problem-solving skills (Feletti et al., 1980).

Evaluation by Students

The strand is evaluated together with the rest of the semester at the end of each semester. These evaluations vary slightly in style but usually consist of responses to open ended request for comments on each part of the semester.

The coordinator of the Strand also meets each cohort of students for face-to-face evaluation.

The clerkships are evaluated in each semester. A questionnaire is used with the following headings: introduction, educational value of the activity, quality of tutorship, quantity of tutorship, feed-back, demands on the student, degree of student responsibility, time for own activity, and overall rating. Each heading is linked with a Likert scale and open ended comments. Students are also invited to comment on any other aspect of the clerkship. The responses are summarised by the general practice coordinator. In the autumn of 1991, 63% of the students in semesters 6-9 participated in these evaluations (Table IV). We aim to raise the response rate to at least 75%.

Results

In the Spring semester of 1992 117 students undertook their clerkships at 35 of the 36 PHCs in the county, and 17 students clerked outside the county. This includes all semesters. A full programme involves some 170 students undertaking clerkships in each semester. The allocation of students to PHCs and GPs in semester six, is illustrated in Table V.

Table IV. Response rates of students' evaluations of their clerkships in general practice, Autumn 1991

Semester	Response rate (%)
6	79
7	68
8	28
9	83

The first cohort of students graduated in January 1992. Up to now 43 GPs - representing about 40% of all GPs in the county - have participated in the Strand. Most of the GPs, who have seen a group right through the Strand, have since taken on a new group of students. The GPs described their involvement in the Strand as very stimulating and helpful in their development as individuals and as professionals. The Strand was highly valued by the students according to their evaluation of the semester. They regarded it as a stimulating and important part, which facilitated their theoretical studies and gave them an understanding of their future role as physicians.

The results of the students' evaluations at the end of the Autumn 1991 semesters are summarised in Figure 5. The clerkships were given high scores by the students. They considered it to be of very high educational value and the tutorship to be of very high quality. Frequent comments expressed appreciation of the range of patient problems and the personal tutoring by the GPs. They also appreciated the opportunity to gain another perspective on common problems as compared with their hospital experience. Among their concerns were difficulties in getting enough time for guidance, as well as the tendency to demand too little from the students and to give too little responsibility to the students. The GPs appreciated the chance to share their expertise with the students and considered that the distinct emphasis on the basic tools and skills of the GP had given them and general practice a higher status, both among their hospital colleagues and in the Faculty.

Discussion

Is it really worthwhile for students to spend so much time in general practice? The response must be "Yes", because general practice is an appropriate setting where students can be exposed to common problems. It is appropriate because the GP can be a role model of a problem-solver using basic skills often with an emphasis on prevention. Students can also follow patients and their problem over a period of time and become familiar with getting to know continuity of care. The problems are relevant for undergraduate education because

Table V. Allocation of students for clerkships in general practice in semester 6. Autumn 199, showing how one student generation is assigned to different Primary Health Centres and tutors

Clerkship

Student	PHC	Week	Tutor/GP
Lotta Beskow	Såpkullen	34-36	Ann-Britt Lernefors
Ali-Rheza Akhbarati	Borensberg	34-36	Ulla Ahlström
Bodil Paulsson	Skogsfrid	34-36	Göran Sommansson
Lisa Strömmer	Torkelberg	34-36	Christel Aurelius
Elisabeth Ljungberg	Sandbyhov	34-36	Dirk Vleugeld
Magnus Karlsson	Ljunsbro	37-39	Lizabeth Bellander
Torsten Schumann	Åleryd	37-39	Ingrid Engman
Louise Tibell	Lambohov	37-39	Hans Karlsson
Magnus Nord	Ekholmen	37-39	Ebba Curman
Lena Larsson	Kneippen	37-39	Håkan Hallberg
Lisbeth Brax	Kårna	40-42	Ann-Catrine Berglund
Monica Larsson	Östra Husby	40-42	Kerstin Olstrope
Monica Brännström	Skänninge	40-42	Jan Ahrén
Tove Martin	Östertull	40-42	Wanda Voise
Lucia Kopparmark	Kungsgatan	40-42	Göran Forsberg
Magnus Lagerlund	Ryd	43-45	Sven Engström
Tom Davidsson	Västervik	43-45	Brigitta Björklund
Marie Aastrup	Brinken	43-45	Bo Björklund
Britta halvarsson	Kungsg Nrkp	43-45	Anna-Britta Kehler
Ola Utbult	Lyckorna	46-48	Hans Ortoft
Pontus Karling	Marieberg	46-48	Peter Eriksson
Gerhard Ege	Mjölby	46-48	Pavel Novak
Helena Pettersson	Söderköping	46-48	Jan Grunewald
Björn Johansson	Hageby	49-51	Åke Svedbäck
Nanny Hareide	Lambohov	49-51	Hans Karlsson
Bo Berggren	Ödeshög	49-51	Ove Haugaard
Anette Hedlund	Kneippen	49-51	Håkan Hallberg

they are common, undifferentiated and, initially, untreated, more often in an early phase, more obviously connected to the community and calling for an holistic approach, different from the problems seen in hospital wards (Fraser, 1991).
Thus, general practice in Sweden has the structure and content to be a major educational resource.

However, are there sufficient GPs, and, is their competence adequate? Because some of the students have elected to undertake their clerkship at PHCs in their former home counties, it has been possible to find enough GPs for the Strand and clerkships in the local county. Though, this is threatened by the growing trend to let market forces steer the health care system, this could lead GPs to neglect such "unproductive" work as tutoring students (Iliffe, 1992).

The weakness has been the quality of the clerkships despite of the high rating given by the students. It is, therefore, essential to develop further the tutors' competence in how to guide the students in their study of relevant problems, how to challenge them with appropriate tasks, how to give them helpful feed-back and how to arrange this longitudinally, so that the curriculum results in continuous growth for the students. Further development and research are also needed to enhance and assess the students' clinical competence, especially communication skills, and how to maintain and evaluate the quality of the education. These will be our research objectives.

In summary, important parts of the body and soul of general practice are present throughout the whole curriculum, the soul by the marked strengthening of training in the consultation process, the body by extensive exposing of the students to the wide range of health problems in general practice. This provides them with experience in continuing care, management of common problems, team work, ante-natal care, an holistic approach and community-orientation.
As a consequence general practice will be an indispensable resource in the creation of tomorrow's basic doctors, who will be competent in acquiring new knowledge and prepared to analyse and solve health problems with an holistic approach, both for individuals and for the community.

References

Barber, G.O., et al. (1953). The teaching of general practice by general practitioners. *British Medical Journal, 2*, 36-38.

Barrows, H.S., & Tamblyn, R.M. (1980). *Problem-based learning: An approach to medical education.* New York, NY: Springer Publishing.

Engel, C.E. (1982). Problem-based learning. In: K.R. Cox, & C.E. Ewan (Eds.). *The medical teacher.* Edinburgh, United Kingdom: Churchill-Livingstone.

Feletti, G.I., & Engel, C.E. (1980). The modified essay question for testing problem-solving skills. *The Medical Journal of Australia, January*, 79-80.

Fraser, R.C., & Preston-Whyte, E. (1988). *The contribution of academic general practice to undergraduate medical education.* Occasional paper, No. 420. London, United Kingdom: Royal College of General Practitioners.

Fraser, R.C. (1991). Undergraduate medical education: Present status and future needs. *British Medical Journal, 303,* 41-43.

Iliffe, S. (1992). All that is solid melts into air: The implications of community-based undergraduate medical education. *British Journal of General Practice, 42,* 71.

Kagan, N. (1975). Influencing human interaction: Eleven years with IPR. *Canadian Counsellor, 2,* 74-96.

Neufeld, V.R., & Norman G.R. (1985). *Assessing clinical competence.* New York, NY: Springer Publishing.

Oswald, N. (1989). Why not base clinical education in general practice? *The Lancet, July,* 148-149.

Painvin, C., Neufeld, V., & Norman, G., et al. (1978). *The triple jump exercise: A structured measure of problem-solving and self-directed learning.* Hamilton, Canada: McMaster University.

Reid, A.L.A. (1979). Learning in general practice: The Newcastle experience. *Research and Development in Higher Education, 2,* 63-72.

Saunders, N.A., Engel, C.E., & Feletti, G.I. (1982). Clinical supervisor report. *Medical Teacher, 4,* 151-154.

World Health Organization. (1986). *Targets for Health for All. Targets in support of the European regional strategy for Health for All.* Copenhagen, Denmark: WHO Regional Office for Europe.

Wretmark, G. (1984). *The doctor meets man.* Lund, Sweden: Studentlitteratur.

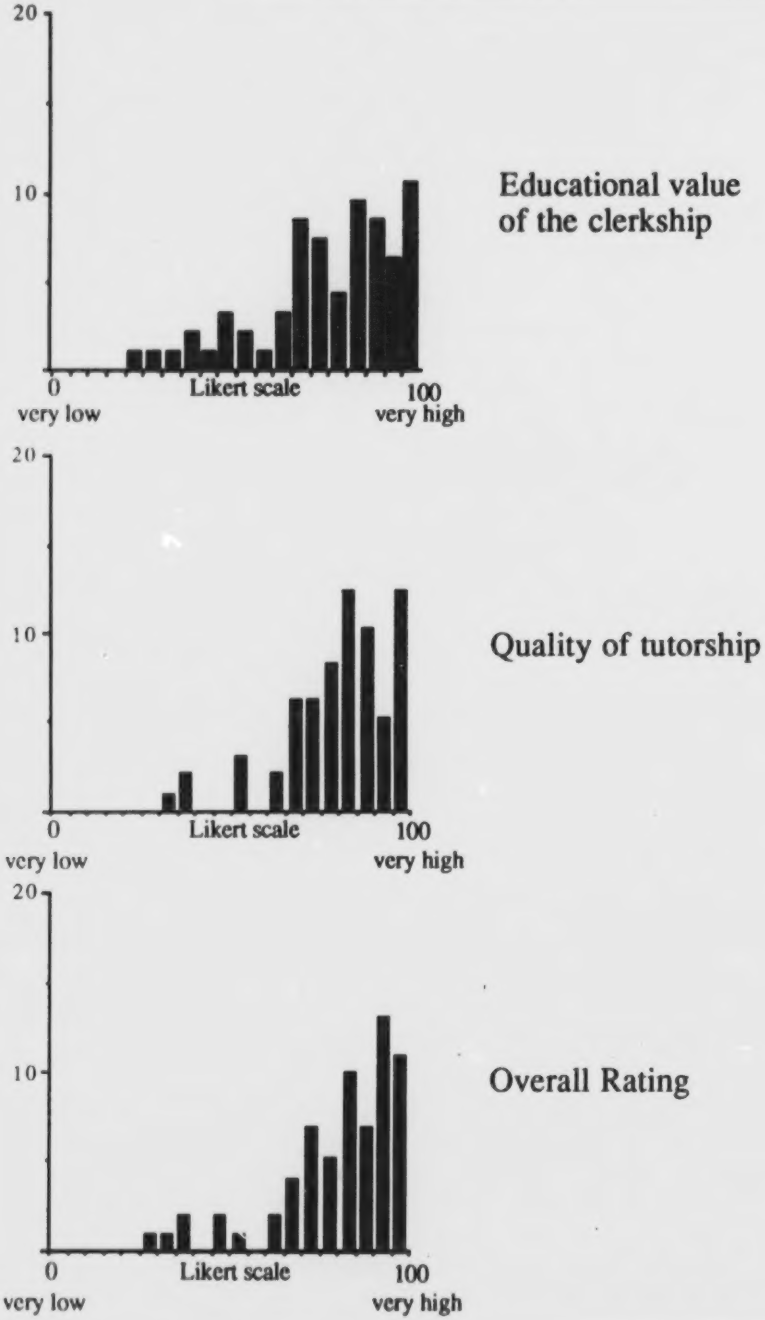


Figure 5. Summary of evaluation responses by the students on their clerkships in General Practice in semesters 6-10, Autumn 1991

Annals of Community-Oriented Education
1993, Vol. 6, 115-123

The Contribution of General Practice to the Medical Curriculum

A.L.A. Reid
The University of Newcastle
New South Wales, Australia

Abstract

The integrated, problem-based learning course lends itself well to the integration of general practice. Many aspects which would normally be encountered in departmental teaching are firmly embedded as part of the general course, and general practice is specifically taught in years two, three, four and five of the five year course. In each of those years it is assessed, and students must pass in order to proceed.

Until 1991, assessment in years four and five was entirely embedded within the Faculty's integrated assessment. This was not altogether satisfactory, as students could pass without satisfactory performance in general practice. Since 1991, the assessments have been separated and it is expected that this will improve our ability to ensure that general practice topics are adequately studied.

It is impossible with limited staff and funds to supervise the external attachments in person, but mechanisms are in place which appear to produce a satisfactory experience for the great majority of students. Two recent national committees of enquiry have recommended that more emphasis be placed on teaching students general practice and, in particular, that general practitioners (GPs) should be paid for taking students. However, no funds have been provided for these purposes. Evaluation is beginning to confirm that Newcastle NSW graduates are well prepared to meet the needs of the Australian population.

Background to the Faculty

The Karmel Committee of Enquiry into Medical Education and Manpower Needs in Australia (1973) recommended that a new medical school be established in Newcastle. This recommendation was in response to the perception that there was a shortage of medical graduates in Australia (soon to be proved false), and that there were serious defects in the traditional methods of medical education in Australia. Graduates of the established medical schools were thought to be orientated too much towards the diagnosis and management of disease in individuals and not sufficiently sensitised to the psychosocial and community aspects of illness.

The University of Newcastle was charged with the task of setting up a medical school with an intake of 64 students per year. It was to produce graduates who were competent doctors with a comprehensive view of the ill health of the community. Foundation staff under the

---

Requests for reprints should be sent to A. Reid, University of Newcastle, Faculty of Medicine, Discipline of General Practice, N.S.W. 2308, Australia.

leadership of Professor David Maddison, in association with members of the local medical and lay communities, wrote a comprehensive list of Programme Objectives (since revised) which describe the desired attributes of the graduates (Faculty, 1985). The decision was taken to adopt a problem-based learning approach and to emphasize self-directed learning and early clinical experience. Strong emphasis was to be placed on encouraging students to examine broader concepts of community health. To this end students were to be provided with early clinical attachments and community experience (Maddison, 1980). The first cohort of students joined the Faculty in 1978.

The Education Process

It became clear that the Programme Objectives fell into groups and these were developed into five domains of learning: 1. professional skills; 2. critical thinking; 3. the diagnosis, management and prevention of disease; 4. population medicin; and 5. self-directed learning.

Domain III was the major strand for cognitive learning through the process of problem-based learning. This was initially thought of as "the problem solving domain". Early experience quickly showed that this was a mistake as students concentrated on trying to find the solution or answer to the problem they were studying rather than on learning about the issues raised by the problem.

Criteria for Selecting

Problems for study were frequent in the population, potentially life threatening, disabling, treatable, and preferably preventable. This was designed to ensure that learning would be well matched to community needs. The other domains, particularly Professional Skills, were designed to be closely integrated with Domain III. For instance, when students study problems of the cardiovascular system they learn about the examination of this system at the same time.

In a setting such as this, it was natural that general practitioners (GPs)would contribute to curriculum design and that students would spend significant time in general practice.

General Practice in Australia

In Australia, there is a comprehensive government medical insurance scheme, known as Medicare, which provides full hospital cover for all Australians and subsidises medical consultations to approximately 85% of a schedule of fees. Pensioners and other welfare recipients generally receive services from general practitioners at a rebate rate, so that they do not have to bear out of pocket expenses. Patients who require the services of specialists outside a hospital are similarly subsidised, provided they are referred to the specialist by a general practitioner. General practitioners, therefore, have a central gate-keeping role in the Australian health system and can provide a rich variety of experience for medical students

General Practice in the Faculty

At the foundation of the Faculty the general practice needs of the curriculum were served by the appointment of two half time staff members in the Discipline of Community Medicine. These positions were upgraded to full time positions, and in 1992 a separate Discipline of General Practice, headed by a Professor, was established.

Newcastle students learn from general practice in a number of different ways.

1. The undergraduate curriculum relies on problem-based learning derived from carefully chosen biomedical problems. Because of the way the problems are chosen, they necessarily represent many of the issues which are encountered frequently in general practice. Most problems present patients who are represented as a variety of ages, ethnic backgrounds and of both sexes, so as to be approximately representative of the population. Frequently, the patient "presents" to a general practitioner. If the condition requires it, the problem allows that he or she may be referred to a specialist or a hospital. The loop back to primary health care is often via a discharge letter from the hospital that informs the referring general practitioner about developments. In one way or another, general practice is frequently seen in Domain III as part of the clinical process.
2. A substantial number of general practitioners tutor in a wide variety of areas of the curriculum. This gives students direct exposure to general practitioners. Unfortunately such involvement had to be reduced as University funding for the payment of external tutors falls. Ten to fifteen GPs are involved at present.
3. Many topics which come under the care of a Department of General Practice in a traditional medical school, e.g. interactional skills, counselling and sexuality, are specific components of the general curriculum at Newcastle. They are not seen as the special province of the Discipline General Practice, although the discipline is involved in the development and implementation of these areas[1].
4. The discipline provides input to specific areas of the course. For instance, in fifth year, when students are studying oncology, there is an obvious need for students to be made aware of the place of the family doctor in screening; early diagnosis; helping people to cope with living with cancer; and, finally, terminal care.

   The subjects are introduced at an interactive lecture, and Palliative care aspects are considered in three afternoon small group sessions as part of a larger Palliative care experience.

The Place of General Practitioners in Assessment

The assessment of specific general practice experiences is carried out by the discipline and will be described later. Academic GPs are also involved in the assessment of Domain I, professional skills, in all years of the course. This process involves the observation and rating of students' history taking, physical examination, counselling, patient education, the writing of referral letters and discharge summaries. In part of the course use is made of simulated patients, who are an enthusiastic group of volunteers and attend year after year for assessments; at other times students are assessed on hospital patients. Moves are being made to involve more practising general practitioners and their patients in this process, but financial constraints make this difficult. GP academics are involved with the assessment of Population Medicine (Domain IV) and students own learning (Domain V). They also contribute as examiners in Paediatrics and Reproductive Medicine.

---

[1] It should be noted that this fully integrated curriculum is administered not by departments but on behalf of the Faculty as a whole (Clarke, 1984).

Relevance of Problems Studied by Students to the Health Needs of the Community
This question was extensively reviewed by Professor Hennen (1982). At that time the curriculum had just graduated its first cohort of students. A number of imbalances were noted both in the contents of the problems, and their mode of presentation. The course was revised in 1984-85, and the question was re-examined by the discipline in 1992.

Broadly speaking there is reasonable congruence between the 20 commonest symptoms in general practice and the problems studied by students: dyspnoea is heavily over-represented, but this may not be inappropriate as this symptom relates to cardiac, thoracic and metabolic disorders, most of which are important.

The two foundation GP academics were heavily involved in early course development and had ensured that settings were predominantly in general practice in the first run of the curriculum. The revision was largely specialist dominated, and some of this context has been lost. A number of other omissions were noted in 1992. For instance, there is now no problem in which a doctor or a medical student appear as a patient, and there is no presentation of a problem by referral from a nurse. There is still insufficient emphasis on continuity of care. To counteract this last deficiency, an initiative is to be launched where students will identify two hospital patients whom they have clerked. They will visit each patient at home with the patient's general practitioner, when the patient is discharged.

General Practice Attachments

There are specific general practice attachments with different objectives for various years of the course (see below). These, combined with a major workshop in fourth year, meet the educational objectives of general practice (Faculty, 1983).

Second Year

In their second year, students spend eight half-days in general practices in the Newcastle area: this time is usually divided between two practitioners. The attachment is specifically directed towards students examining the process of the general practice consultation, and contrasting it with the consultations which they are learning to conduct in hospital settings. Students are given clear guidelines about what they are to do; general practitioners are not required to do much specific teaching. They are expected to get on with the day's work and to provide an opportunity for student's learning. General practitioners are given a handbook about the attachment, so that they know what is expected of them and of the students.

The students are expected to observe and to write a series of one-page commentaries on some of the processes they observe. This might include, for instance, the observation that the general practitioner conducts only a limited physical examination of some of the patients. The student is expected to write a brief case vignette to illustrate what has been observed, and he/she is expected to comment on whether this limited examination was suitable.

In another task, students might be asked to comment on the use of time as a diagnostic or management tool, and whether this is appropriate. They might also be asked to comment on the fact that the consultation observed was substantially different from that conducted by a hospital doctor, because of the general practitioner's familiarity with the patient's past and the medical records. The eight written tasks are selected by the student from the extensive list of possibilities proposed by the Faculty. The tasks are assessed by Faculty general practitioners, and students must pass in order to proceed to the next year of the course.

Supervision and Quality Control

With only two academic members of staff in general practice, it is difficult to provide quality control for some 40 general practitioners who participate in the attachment. When the programme was first established, teaching workshops for the general practitioners were conducted. These were well attended, and it was not felt necessary to continue to repeat them for established practices. There is a place for conducting further workshops for newer GPs from time to time.

Some monitoring is possible.

1. Students are encouraged to confer informally with Faculty staff if they experience problems with the attachment. They occasionally do this, and a number of less than satisfactory practitioners no longer participate.
2. The students' eight tasks provide a convenient window into the practices when the tasks are being assessed. Unusual practices have occasionally emerged and have been discussed with the student concerned. Once or twice a highly dysfunctional practitioner has been identified, and appropriate action was taken. For instance, the attending student was the first person to identify the early dementia of an ageing GP.
3. Each student completes a brief evaluation of the experience, and unfavourable reports are followed up.
4. There is a good deal of informal contact between academic general practice staff and practising general practitioners at postgraduate functions, in connection with the extensive research programmes carried out by the discipline, as well as through the Family Medicine Programme[2] network and the local Sub-Faculty of the Royal

Australian College of General Practitioners (RACGP). This limited amount of contact between general practice academics and their practising colleagues contrasts strongly with the frequent contact between hospital and staff specialists, whose job description includes a specific obligation to teach. Teaching hospital funding takes this teaching and research aspirations into account. No such funding is as yet available for general practice.

The situation is sub-optimal from the point of view of quality control, but it is the best that can be managed with limited staff. Participating general practitioners receive the title "Clinical Teacher" and are entitled to use the University library facilities. However, they receive no remuneration.

Possible future developments

A series of government reports has drawn attention to the fact that it is desirable for students to have more experience in general practice, and that funding must be provided for this. To date no such funding has been provided. Government has, however, funded Divisions of General Practice in Australia; networks or groupings might be a better description. The intention is to encourage GPs away from their present isolation, to work together and to work with state run community health services. Divisions have a responsibility to contribute to undergraduate education, general practice teaching should therefore increase. To date there has been a reluctance to fund such activities. The matter is still at a developmental stage, and there is some hope for progress.

Third Year

In third year, all students spend eight weeks in a country city. As part of their attachment they spend six to eight half-days with general practitioners. During this term they are expected to concentrate on the management of chronic conditions which are common in general practice, notably arthritis, hypertension, cardiac failure. They are allocated a patient with multiple problems who is either in hospital, because the general medical and support services have been unable to maintain the patient at home, or at home maintained by multiple support services. At the end of the term students formally present their patient to their fellow students, local general practitioners and visiting academics from the Faculty. This process is formally assessed by the academics who visit the country centres once each term for the general Professional Skills assessment.

---

[2] The Family Medicine Programme is a government funded scheme for the vocational training of general practitioners. The training period is three years and involves some basic hospital posts, as well as supervised and subsidised training in teaching practices. A rapidly increasing number of graduates entering general practice now go through this programme, successful completion prepares them for the Fellowship examination of the Royal Australian College of General Practitioners (RACGP).

Supervision and quality control

The country general practitioners are recruited in consultation with the Faculty's clinical supervisor at each centre. The supervisors are senior specialists who are, or have been, clinical superintendents at the hospitals and are aware of the quality of their general practitioner colleagues. Many of the GPs have teaching commitments with the Family Medicine Programme. Evaluation by students is carriet out informally with the clinical supervisor or the Faculty GP staff when they visit. The Senior Lecturer in General Practice was the Faculty's Country Term organiser for some years, and this greatly facilitated GP recruitment and retention. Regular visits by GP academics to all six country centres is desirable, but is not financially possible and could not be accommodated within their present work schedule.

Fourth Year

In fourth year, students while working in hospitals, encounter problems of ageing, reproductive medicine, and paediatrics in addition to general medical and surgical attachments. At the end of the fourth year, the Discipline of General Practice runs a workshop over seven working days and uses the introductory device of a complicated family. This family has a substantial number of biomedical and social problems which are used as a vehicle for discussion of the community services which could support the family's problems, and also as a prompt for considering a variety of common conditions such as headache, backache, itchy skin, common gynaecological conditions, including problems with the contraceptive pill. In addition, the principles of check-up and prevention in general practice, the common infections and the rational use of antibiotics are explored. The organisation of general practice and the place of information systems in the future are presented by a GP who is an expert in this field. Dentistry makes its only appearance in the undergraduate course during this workshop. There is also a segment on the pre-employment medical examination.

At the end of the fourth year, there is a two-hour OSCA (Objective Structured Clinical Assessment), largely based on the General Practice workshop and on previous general practice material in the course, with strong links to basic science content, e.g. the microbiology of urinary tract infection.

Final Year

In fifth year, students have a two-week attachment to general practices **not** in the Newcastle area. Various financial inducements are provided by the New South Wales (NSW) Government to help students to have attachments in rural practices, and this is encouraged by the Faculty. In spite of this, a substantial number of students continue to opt for urban placements. The emphasis of these placements is on the fact that they are likely, in the following year, to encounter similar patients in a hospital casualty department, and they need to know how to manage the common problems which present to a general practitioner. The emphasis in this final year is more on content than on process. There is a one-hour Short

Answer Question paper on general practice in the fifth year assessment.

Supervision and quality control

With students scattered to some seventy practices, mostly within NSW but sometimes out of the state or even overseas, direct supervision is impossible.

Recruitment of participating general practitioners was originally through the vocational training network of the Family Medicine Programme and the RACGP visiting fellow. A continuing supply of willing and helpful doctors has been maintained, because the Faculty insists that each student writes a brief description of practice facilities, and an evaluation of the quality of his/her experience. These are reviewed and favourable experiences kept on file for the following year's students. Reports of poor experiences are rare, and the general practitioner concerned would be dropped from the file. Many students make their own arrangements with GPs willing to teach and, as above, evaluations are produced. Each GP who takes a student fills in a Clinical Supervisor's report (Saunders et al., 1982), in parallel with all other clinical attachments. This comment briefly on the student's interactional or professional skills and forms part of the student's assessment. This involvement is seen to be important in giving the general practitioner due recognition. The form has occasionally led to the identification of important student problems. On only one occasion, since the programme began, have the GP and the student proved to be incompatible.

Evaluation and Outcomes

Many people originally thought that Newcastle was established specifically to produce general practitioners. This was never the intention; the Faculty sought rather to produce doctors who could enter all varieties of medical practice with a broad understanding of medicine and of community health.

In 1990 a questionnaire was sent to all available Newcastle graduates except those who were interns (house officers) at the time. A sample of 331 was obtained (77.8% of the total graduates). Of this group, 40.6% were working in Newcastle, 27.2% in Sydney. 10.1% in Canberra, the national capital city, and the remaining 22.1% were in smaller centres or rural practices.

Not surprisingly, as many recent graduates were in postgraduate training, 57% were working in hospitals and 29% held positions as general practitioners. Of the 136 graduates who stated that they were in vocational training (including those in general hospital rotations) 58 were training for general practice.

It is difficult to draw any conclusions about the proportion of Newcastle graduates who will finally become general practitioners. That is less important than the overall qualities of the graduate in relation to the programme objectives. It is even more difficult to quantify the effectiveness if the Newcastle programme in comparison with traditional medical schools. Unpublished studies of intern performance show that Newcastle students perform equally well when compared with graduates from other medical schools on measures of knowledge. Surveys of hospital administrators who have junior medical staff recruited from all three NSW medical schools suggest that Newcastle students are notable for being good with patients, good at dealing with clinical problems on the wards and good at physical examination. Informal reporting of Family Medicine Programme trainees observed in a special training practice, confirms that Newcastle graduates are comfortable with patients and highlights their possession of special strategic skills in dealing with patients with health problems that require preventive intervention.

These indications, as far as they go, favour the view that the Newcastle course produces a graduate who is well able to meet community needs. More detailed studies are in progress. As the contribution of general practice to the undergraduate curriculum is completely integrated, it will never be possible to identify its precise place in the production of an acceptable graduate.

References

Clarke, R.M. (1984). Organising an institution to deliver educational programmes designed to achieve capability. *Programmed Learning and Educational Technology, 21,* 301-306.

Faculty of Medicine. (1983). *Faculty working paper XV.* Newcastle, Australia: University of Newcastle.

Faculty of Medicine. (1985). *Faculty working paper XVII revised.* Newcastle, Australia: University of Newcastle.

Hennen, K.E. (1982). *General practice in the Newcastle undergraduate curriculum.* Newcastle, Australia: University of Newcastle.

Karmel, P. (chairman). (1973). *Expansion of medical education.* Report of the committee on medical schools to the Australian Universities Commission. Canberra, Australia.

Maddison, D. (1980). The University of Newcastle, New South Wales, Australia. In: F.M. Katz, & T. Fülöp (Eds.). *Personnel for health care: Case studies of educational programmes.* Public Health Papers No. 71, Volume 2. Geneva, Switzerland: World Health Organization.

Saunders, N.A., Engel, C.E., & Feletti, G.I. (1982). Clinical supervisor's report. *Medical Teacher, 4,* 151-154.

Annals of Community-Oriented Education
1993, Vol. 6, 125-139

The Hawai'i Education Community Partnership Programme

Henry Foley and Grahame Feletti
Ke Ola O Hawai'i, Inc.
Honolulu, Hawai'i, United States of America

Abstract

This report describes a new project aimed at fostering an academic-community partnership, partly through the development and implementation of a new multiprofessional curriculum, and through relocating the teaching of some profession-specific courses in medicine, nursing, social work and public health to different community sites around the islands of Hawai'i.

Background

In 1989 the Kellogg Foundation initiated its programme of community partnerships. The purpose was to re-orientate the U.S. system of education for health professionals by increasing the number of primary care practitioners who would be particularly suited for, and committed to community-based health care. The Foundation contracted with seven partnerships to redirect the education of health professionals by creating community-based, non-hospital teaching centres which stress primary health care education, research and services through a multiprofessional approach. Each partnership was expected to implement a comprehensive long term strategy for changing their institutions to prepare health professionals by linking their educational activities to a people-oriented health care system.

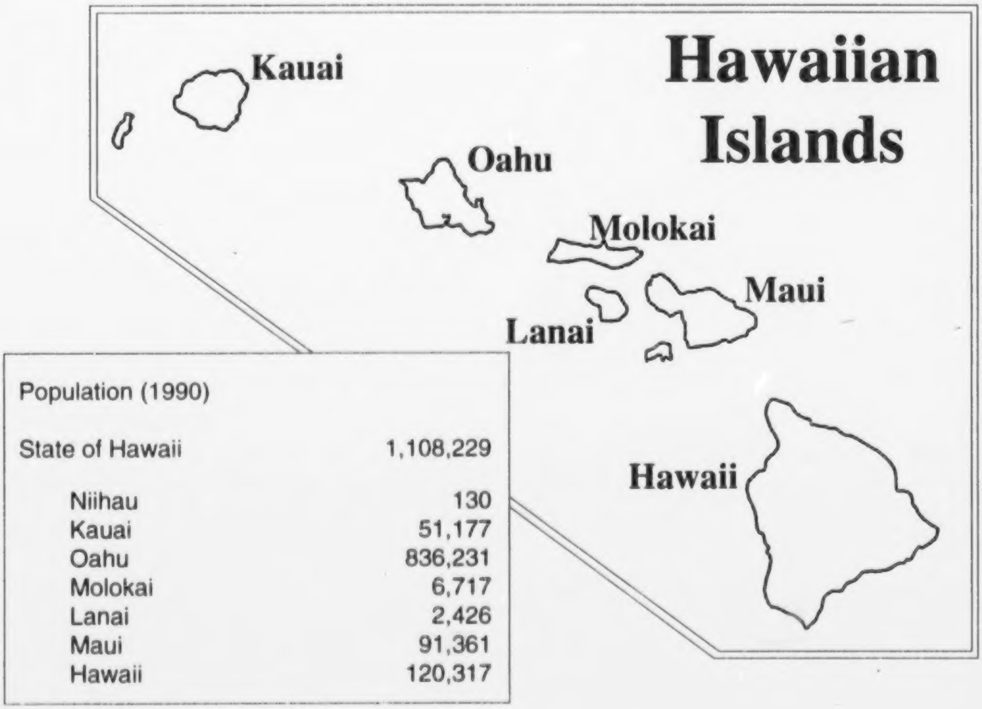
Ke Ola O Hawai'i, Inc. represents the partnership funded initially by The Kellogg Foundation. A Board of Directors drawn from the academic and community partners is the policy-making body which implements the Kellogg vision tailored to Hawaii. During the first year (1991-92) of the project, Ke Ola O Hawai'i recruited its project director, project team and six committees: Facilities; Finance and Operations; Health Care; Faculty Development; Curriculum; Research; and Data/Information. Each committee includes community representatives and academics from the Waianae Coast Comprehensive Health Centre, the Kalihi-Palama Health Clinic, the Queen Emma Clinics, and the Schools of Medicine, Nursing, Public Health, and Social Work at the University of Hawai'i. These committees and the project team have designed and are implementing a multiprofessional curriculum and research agenda.

Now in its second year, the project is focused on improving the delivery of primary health care services. These activities require major organizational and programmatic adaptations

---

Requests for reprints should be sent to G. Feletti, Ke Ola O Hawai'i, Leahi Hospital, Honolulu, Hawai'i 96816, United States of America.

for all the institutions involved. An enormous amount of time and energy is focused on securing new financial resources and the reallocation of existing resources to institutionalise the educational process outside the academic ivory towers and in the local communities.



Population (1990)

State of Hawaii	1,108,229
Niihau	130
Kauai	51,177
Oahu	836,231
Molokai	6,717
Lanai	2,426
Maui	91,361
Hawaii	120,317

Figure 1. The geographical distribution of islands and the population of the State of Hawai'i

Aims and Goals of the Ke Ola O Hawai'i Project

The project aims to develop a long-term partnership of the Schools of Medicine, Nursing, Social Work and Public Health at the University of Hawai'i (UH) with at least the three community health centres or clinics identified above. The project goals are to: 1) develop the organisational capacity of the "academic - community" partnership; 2) create a model of community-oriented education for the health professions; 3) design and promote community-oriented research to improve the partnership's health care and education programmes; and 4) improve and expand community-based health care for the underserved.

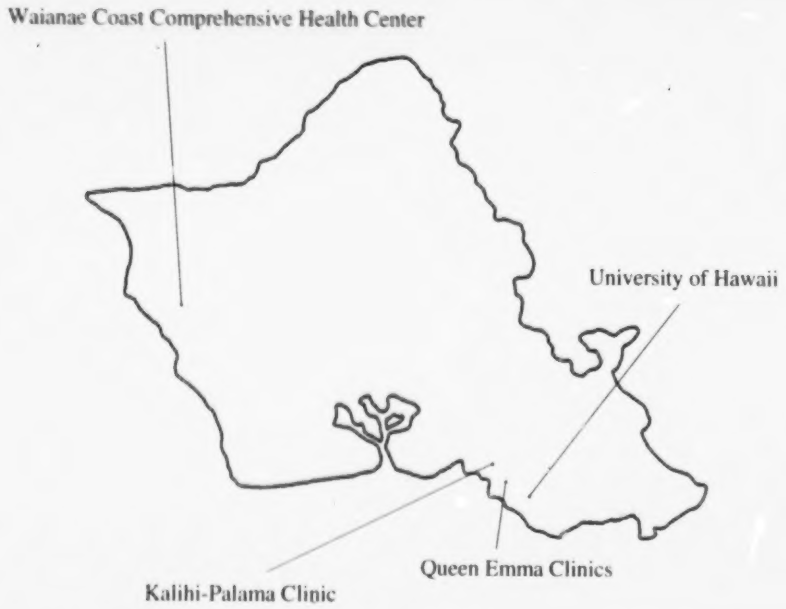


Figure 2. The partners' location on the island of Oahu

Key Features of this Education Project

Integration of six distinctive features shape two kinds of curricula in this project.

(i) Community-oriented education - a partnership approach

Implementing community-oriented education often reflects an academic (research) and paternalistic (expertise-based) approach. In keeping with lessons drawn from international experiences of the W.K. Kellogg Foundation (De Vries et al., 1989) the Ke Ola project is developing a strong **education-community partnership.** The new curricula engage students in a learning process that is grounded in the notion of community-based education for health professionals which will directly benefit that community. Some of the courses are on campus, but this Project has set up learning centres near community health centres, so that students, academics and members of the community can learn together more naturally. The project trains students from the participating communities.

(ii) Multiprofessional education - an integrated approach

Multiprofessional education (MPE) has been defined as "the process by which a group of students or workers from health-related occupations learn together during certain periods of their education. Interaction is an important goal, in order to "collaborate in providing promotive, preventive, curative, rehabilitative and other health-related services" (WHO, 1988).

Teachers from the participating schools at the University of Hawai'i are collaborating in a new multiprofessional curriculum. It complements and builds on competences expected of students in their respective profession-based courses. Students in this new curriculum are guided by tutors from all four professions and from the community with the goal of improving the primary care services to the community. Each cohort of these four groups of students will spend between one and four years on this project, learning and working together with health centre staff and the community.

(iii) Profession-based coursework - promoting inquiry skills

Each of the four participating schools at the University of Hawai'i is also committed to reviewing its own curriculum with a view to improving the way in which its professionals deliver community-oriented primary care services. Nursing is now adopting an **"inquiry-based"** approach[1] to teaching and learning. Medicine is extending its **"problem-based"** curriculum (Boud et al., 1991) into the third and fourth year. Medicine is also developing new primary care and family practice clerkship programmes as alternatives to the more specialty-oriented tracks. Social Work has revised its Masters degree programme and course objectives for students opting for a health-related field of professional practice. Public Health, which already has community-oriented and problem-based coursework, is revising some courses to complement the new multiprofessional curriculum.

(iv) Project-centred learning

This initiative incorporates and extends problem-based and inquiry-based approaches in the education of health professionals, by aiming to improve the primary health care of local communities. In this multiprofessional curriculum a **project-centred** approach focuses on community health needs first, and professional practice issues second. It requires commitment from students, teachers and community members to address the community's health needs systematically. Consistent with the philosophies of problem-based and inquiry-based learning, it requires critical thinking about the nature of those needs and what information is required. Students have access to community and academic sources of information as they attempt to identify and tackle a particular health need. Besides being resourceful learners, students also need to be sensitive to, and aware of the roles and strategies, the politics, and the key players in any community health project.

(v) Community-oriented research - in cooperation with the community

Community-oriented research in health is an important goal of this project. It requires a systematic, multiprofessional approach to identify and address the community's health needs. Community members should be involved in all phases of the research, and the results should have the potential to improve the health of the community. The main benefits should be to improve delivery of primary care services, to prevent health problems, and to advocate improved services to indigent and underserved populations.

---

[1] Inquiry-based learning (IBL) is a broader, more flexible approach which makes fewer assumptions than PBL about the nature of "the problem", how it is presented, the teaching methods used, or the roles of the student or teacher. An example is given later in this paper, but a fuller comparison is given in Feletti (in press).

Teams of students in the Ke Ola O Hawai'i project participate in community-oriented research as part of their preparation for becoming primary health care providers in community settings. Teams will become proficient in study design, data collection and analysis, and the communication of results. All students participate in a community health assessment as the primary learning activity of their multiprofessional learning team. Additional research opportunities, training, and limited funding are also available to them in collaboration with community members, teachers, and health centre staff, if, for example, students were to link with current research or service projects.

(vi) Telecommunications and information access

Geographical isolation, standard telecommunications, and manual systems for storing or retrieving patient records work against efficient professional practice at community health centres. It was anticipated that Ke Ola students would face such difficulties when trying to communicate with, or access learning resources at the University campus, as they spend one or two days a week in the community. Through its Data/Communications Committee this Project is setting up new, and integrating existing resource networks of the University of Hawai'i and Kapiolani Community College. Students and on-site academics at the community health centres can use computers to access national and state information data bases and communication systems that are available on campus. The health centres are also establishing databases on the health status of their respective communities. These can be made accessible to students for community-sanctioned research. Optic fibre technology is being installed to link campuses and community health centres on the island of Oahu.

Students, Curricula, and Weekly Schedules

(i) Profession-based groups

All the students are college graduates, with a wide range of subject majors and other experience. Their ages range from 20 to 36 years. Each school has begun with a small number of students at the three health centres for part of their regular coursework (Table I). This gives the centre staff a manageable influx of students to supervise in their busy schedule, and to introduce newly appointed tutors to different curricular approaches. At each site, for example, students in the Social Work programme spend up to three days per week on site for their clinical casework with clients and their families. A group of five first year Medical students meet twice a week for problem solving tutorials and once a week for clinical skills training, with health centre physicians as their tutors. The actual weekdays for these medical tutorials differ between sites to fit in with the clinical schedules of their tutor, but a typical weekly schedule is shown in Table II. The five Nursing and two Public Health students assigned to each health centre carry out some casework under supervision at the community site and attend other classes back on campus. All four schools are intending to increase the number of students at each site. The project director is committed to identifying and progressively phasing in up to seven more learning sites on the islands of Hawai'i over the next five years.

Table I. Distribution of students and allocation of time in the multiprofessional curriculum (MP)

Profession	**No (%) of Class in this MP Curriculum**	**Percent of Week in MP Curriculum**		**Graduate School Enterance level**
		Semester 1	**Semester 2**	
Medical	Year 1	10 %	10 %	15 (25 %)
Nursing	Year 2	10 %	10 %	12 (25 %)
Public Health	Year 2	10 %	10 %	6 (15 %)
Social Work	Year 2	10 %	10 %	6 (15 %)

$ Of the original 15, 3 students have withdrawn - 2 due to hardship caused by Hurricane Iniki to their homes on the island of Kaua'i

Table II. Typical involvement (% time/week) of teaching personnel in the Ke Ola O Hawai'i project at each health centre

Role	**(FTE)**	**Multi Professional**	**Profession specific**	**Research**	**Service at the Health Center**
Tutor*					
Medicine	(1)	10 %	30 %	20 %	40 %
Nursing	(1)	10 %	30 %	20 %	40 %
Social Work	(1)	10 %	30 %	20 %	40 %
Public Health	(1)	10 %	23 %	-	33 %
Community Health Worker	(1-2)	20 %	-	-	80 %

FTE = full time equivalent position
Public Health was not funded as a full time position

(ii) Profession-based curricula: innovative approaches

Problem-based learning (PBL), and instruction in **small group tutorials** are favoured by the Schools of Medicine and Public Health. The School of Nursing now prefers a broader framework, called **inquiry-based learning (IBL)**, to generate students' questions through observation and interview, critical incident, literature review, and simulation (Galbraith, 1991). Both **problem-based** and **inquiry-based** approaches have much in common - namely to make learning more interesting and interactive for students, to develop critical thinking and clinical reasoning skills, and to improve their understanding and use of relevant knowledge. But PBL and IBL approaches differ in their context and methodology. PBL uses a well-constructed clinical problem or simulation of professional practice to start, and a tutor to guide the learning process. IBL may use a wider range of experiences or teaching methods to generate students' questions. Both PBL and IBL approaches promote discussion in small groups and self-directed learning. In PBL students go through a fixed sequence of steps analyzing data presented by their tutor. In IBL the process is more flexible, and the tutor may be both co-learner and teacher at different stages. For example, although site tutors may be skilled clinicians in their professional fields, they may not know much about community health, or needs assessment methods, or little about the ethnic groups being served. Thus in this project teachers and students learn together.

(iii) Multiprofessional learning teams

The 15 students at each community health centre may split into two multiprofessional learning teams, each having two or three students from Medicine, two or three from Nursing, and one each from Social Work and Public Health. There is also a community health worker in each group to provide liaison with the community and advice on appropriate ways of conducting a community-oriented health project. At the start of a semester, each team is also assigned two of four profession-specific tutors as their multiprofessional tutors who co-tutor them on Thursday mornings, facilitate the planning, and supervise the implementation of the students' community project. The students are also expected to meet informally during the week for planning or other related activities (e.g. community visits). In planning their project students divide the tasks without concern for professional role or academic level. They rotate the roles of scribe and team leader at each tutorial session and choose whether to be part of the networking or literature search subgroups for their self-directed tasks between sessions. Collaboration is modelled by the tutors in their teaching roles, and collaboration is expected of students regardless of their professional status, age, or gender.

(iv) The multiprofessional curriculum and its students

For the academic year 1992-93 the four schools of the College of Health Sciences and Social Welfare at the University of Hawai'i agreed on an outline for a multiprofessional curriculum, in which a small initial number of their students could enroll under existing course structures. The first year multiprofessional curriculum has been developed by the Ke Ola Curriculum Committee (KOCC). It consists of faculty members from each school's curriculum committee, health professionals from each of the participating health centres, a community representative and a project curriculum coordinator (one of the authors, GF). With appropriate support from the curriculum committees of each school, the KOCC can recommend that this curriculum be approved as a legitimate interdisciplinary course for subsequent academic years. The KOCC, as a multiprofessional task-force, develops the new curriculum year by year. The following are some characteristics of existing courses and the students enrolled in the first year programme.

In the School of Nursing, this curriculum is taken as a Directed Reading and Research core and elective course each semester by the 15 second year students who volunteered for this as part of their **Master of Science in Nursing** programme.
In the School of Medicine the multiprofessional curriculum substitutes for the three-term Primary Care and Community Medicine coursework for 15 volunteers or randomly assigned students in the first year of their **M.D. programme**.
In the School of Social Work this multiprofessional curriculum is part of the two-semester Practicum experience for the six volunteers completing their second year Health concentration of their **Master of Social Work** degree programme.
In the School of Public Health six students from either the first or second year of the **Masters or Doctoral** degree programmes volunteered to take this curriculum, either for additional credit or along with a seminar series in community health.

The first year curriculum offers students integrated educational goals through a longitudinal and personal experience of the health of the community. The weekly curriculum is relatively unstructured and follows a more inquiry-based approach which expects students to draw on their personal and professional resourcefulness, but to be guided by tutors from each profession and by community representatives. In the fall (autumn) semester, students conduct a health needs assessment in cooperation with a community that is served by the participating health centre, and to communicate their findings. In the spring semester students conduct an appropriate community health project based on their needs assessment, again in cooperation with that community.

The second year curriculum, currently being planned, will also be project based. Students will continue to work with the same communities and health centres to complete the same broad learning objectives as in the first year, but at higher levels of competence. It is desirable to maintain the same student teams at each site as in first year. However, this will require some flexibility and careful negotiation because three of the four schools have three-semester graduate programmes with other required courses, and the second year medical students will be studying for national board examinations in the second semester. Some student teams are voluntarily continuing their project over the summer vacation as well as into the third semester, in order to accommodate these constraints.

(v) First year multiprofessional curriculum: learning objectives
By the end of the first year, students in different health professions, based at each community health centre will have acted as a team with community involvement to improve or start to improve the health status of a defined community.

WEEKLY SCHEDULE FOR MEDICAL STUDENTS

	MON	TUES	WED	THUR	FRI
AM			MED	M-P CHP	
PM	MED CSk	MED PST		MED PST	MED
	SITE	SITE		SITE	CAMPUS

MED = Medical coursework
PST = Problem Solving Tutorial
CSk = Clinical Skills
Campus = UH Manoa

M-P = Multi-Professional
CHP = Community Health Project
Site = community or Health Center

Figure 3. Weekly schedule for medical students

By the end of the year these students will have demonstrated that they can:

1.0 conduct a community health needs assessment as an interdisciplinary team in cooperation with the community;

2.0 demonstrate responsible and culturally sensitive group "problem solving" or inquiry processes;

3.0 facilitate the group process of their own team and of others;

4.0 identify priority health issues or problems with their respective communities;

5.0 identify and apply appropriate strategies for planning, implementing and evaluating a community health programme which has demonstrable benefit for the community;

6.0 cooperate as an interdisciplinary team working with community representatives in conducting a community health programme;
7.0 demonstrate accountability for their academic learning and community goals of the curriculum through written, oral, or other ways of reporting, as appropriate;
8.0 provide a legacy of community involvement and defined community benefit for subsequent student groups to model.

(vi) Learning methods for the first year multiprofessional curriculum

One of the Project's goals is to develop an integrated system of community-oriented education, research and service which directly benefits the health status of the community and the education of health professionals. The Ke Ola Curriculum Committee (KOCC) agreed that having students and their tutors (or "on-site faculty") conduct a community health needs assessment in cooperation with the community would be an important part of that system. The results of this assessment should then guide development of health service or education programmes which students are to implement and evaluate as their second and/or third semester activity for the multiprofessional curriculum.

A two day **tutor training programme**, one week before the semester, orientated all 17 on-site tutors and community health workers, as well as interested campus faculty and Ke Ola staff to the multiprofessional curriculum. The training introduced PBL and IBL through small group activities and instruction; it used role play and case studies to foster the tutors' teamwork and group process skills. The tutor groups at each health centre were also given some administrative tasks, for example deciding how they would pair up, how they would orientate students to the community and the learning centre, and how best to operate with 15 students in their group.

An **orientation day for all students** in the Ke Ola programme was held in the first week of the semester. The morning session introduced them to the aims and key people of the Ke Ola project, engaged them in small group activities, and described the nature of their new curriculum. During the same afternoon the students travelled to their assigned community health centres to meet the staff and for a first impression of the learning resources. The tutors and students then started to build team spirit by sharing their perceptions and philosophies, their strengths and professional backgrounds.

Each week the students negotiated their learning agenda, and the tutors provided a summary of their teams' learning activities and concepts that had been discussed or identified for self-directed study, as well as group process issues. All three site groups struggled during the first two months to define their roles, tasks, and group process. While there is no shortage of useable models for their community health needs assessment (Hawe et al., 1991; McKillip, 1987), the site groups soon realised that to do this properly in Hawai'i required a careful, sensitive and flexible approach. Students needed to identify their community and then explore ways of getting to know its members. The community health worker had to help both students and community to adjust not only to their cultural differences, but also to any negative attitudes about being over-surveyed and under-served, or their sensitivity to the chosen issues (domestic violence, homelessness, substance abuse). Students needed time to "sense" their community and its health behaviours, to think critically about differences in what they and the community considered were the health needs or "problems", to recognise the kinds of information they needed, and to decide how they would collect and interpret their findings.

This project-based learning then continues in second and third semester, with the community agreeing to let students undertake a community health service, education or research programme - based on their first semester results. This approach has far less "classroom activity" or structure to it than a typical problem-based tutorial or reading seminar. In the process of a year students may set up a variety of learning experiences to achieve the eight broad learning objectives, and to identify and develop their individual skills, attitudes and knowledge.

Learning Resources

(i) The community learning sites

As there is a critical shortage of space at existing community health centres[2], Ke Ola O Hawai'i has set up adjacent "learning sites" for its students to use, consisting of a tutorial room and a smaller resource room (totalling approximately 600 ft^2). The tutorial room is equipped for profession-specific (eg. medical problem solving) or multiprofessional group meetings, for up to 18 people. The tutorial room has a large whiteboard, audiovisual aids, and teleconferencing facilities connecting the learning sites. The smaller resource area nearby is equipped with study carrels for five to eight students. It has three personal computers with word processing and statistical programs. Two of these computers are connected with the local area network (LAN) in the School of Medicine, and to Internet via the University of Hawai'i Computer Center. Students have access to local, state and national libraries and databases. Local telephone, electronic (E)-mail and facsimile machines are also available in this resource area.

(ii) Resource materials

Each profession has a set of reference books, journals, reprints or computer disks or other resources (eg. videotapes, slides, models) in the resource area. There is also a small reference library of multiprofessional books or articles.

(iii) On-campus facilities

When on campus Ke Ola students have access to their own school's library or learning resources, the University Library and other resources (e.g. Computer Center, Instructional Media Center), and other University computer-linked networks, as well as to the LAN (at the Biomedical Sciences building) and E-mail systems.

---

[2] A community health centre (or health clinic) provides primary care, health promotion and disease prevention services. The primary mission of the three centres in this project is to serve the medically underserved, the uninsured and underinsured working poor, immigrants from the Pacific region, and native Hawai'ians.

Resource Persons

(i) The "Learning Community"

This unique group consists of students from the four different professions, health centre staff as well as on-site and campus academics, and community members. For the local community, it means sharing their experiences of health and illness in a climate of trust and mutual respect. For the students it means participating in social or informal learning activities within a supportive personal and academic environment. Each health centre serves quite different communities, and some of the groups within these communities have already been surveyed too frequently without gaining much in return. The Ke Ola students are encouraged by their tutors and community health workers to establish trust and to cooperate with the community on health issues of concern to them, thus achieving their learning objectives and the project's goals.

(ii) The site coordinator

The site coordinator works at the community health centre, and ensures liaison between the students and the community health worker and/or health centre personnel in relation to the community health project. She or he coordinates the students' learning needs and monitors the health centre's research activities, in order to advise or support the students.

(iii) The Community Health Worker (CHW)

The CHW has received special training through the community college system and works closely with the site coordinator. The main duties involve participation in the weekly multiprofessional tutorial and related meetings or visits; helping the student team to achieve its learning goals through contact with the community; and to help develop and coordinate services, special activities, and outreach programmes to members of the community on behalf of the health centre.

(iv) On-site multiprofessional tutors

Many of these tutors are newly-recruited health centre professionals. All are affiliated with the University through the respective schools. They have been selected as tutors because they are committed to multiprofessional health care, they accept the principles and goals of this educational project, and they are interested in continuing their own professional education. Their main roles in this project are to integrate for the students the academic requirements of the educational programme with the health needs of the chosen community and the care delivered by the health centre. These tutors spend one morning per week in classroom contact with the student group, and another half day per week in their own planning meeting. As each health centre has four of these tutors (one for each profession or school), they operate in pairs and take joint responsibility for a team of seven to eight students each semester. They are also resource persons for the other student team at the same learning site.

(v) Campus faculty
Some campus-based teachers act as resource persons for the community health assessment by responding to student inquiry. Others teach the Ke Ola students on campus or supervise for the profession-specific programmes at the sites. Their teaching responsibilities are primarily to their respective schools and departments. However, they can also join in the "learning community" activities at each site as a subtle re-introduction to genuine community-oriented, collaborative research.

(vi) The Ke Ola O Hawai'i staff
The project office has a small team of support staff and professionals (director, curriculum and research coordinators), and a cadre of resource people who are willing to assist with tutor and student orientation sessions, installing and managing data/communication and computer systems, and community-oriented research and funding networks.

Student Assessment in the Multiprofessional Curriculum

Summative (formal) assessment at the end of the first semester requires each student team to do the following, in order to achieve the first year learning objectives.
1) The students must give a verbal report of their progress on the community health needs assessment (Obj. 1.0) to their peers and tutors, health centre personnel and community representatives. Assessment is by that audience using a standard rating form. Course directors may incorporate these collective assessments with their own ratings for grading that component.: and 2) each team submits a typed report of the group's progress and outcomes to their respective course directors for marking. Students are also expected to submit a statement of their respective contributions to the reports; unless otherwise indicated, each student is given the same mark as the team for the two reports (Obj. 7.0).

A similar process of summative assessment is followed at the end of second semester, except that this time the students focus more on their health service or education project (Obj. 5.0). Students grades are the responsibility of their respective schools, as the students are enrolled in four different courses (at least for this first year). The process of grading, including the role of the discipline-tutor, differ between schools, but each school has accepted that their students must participate equitably in their respective multiprofessional team's function and output. While Learning Objective 4.0 is not summatively assessable, it is expected that the group will draft their chosen priority health problem or community health issue as a paper case suitable for other students to work through in subsequent years as part of their regular curriculum. Objectives 2.0, 3.0, 6.0 and 8.0 are seen as requiring formative assessment.

Programme and Project Evaluation

Ke Ola O Hawai'i and the Kellogg Foundation cooperate in an independent evaluation process designed to provide feedback on the project's evolution and to communicate that information to national policy makers concerned with the education of health professionals and primary health care. One intended outcome of Ke Ola O Hawai'i is health care provided by professionals trained in the community and owned by the local communities, where citizens seek customised solutions to their illnesses and ways of maintaining their health.

Evaluation of this programme will occur at two levels. For the **individual (Ke Ola O Hawai'i) project**, the information will help in its ongoing management and planning in this State's particular context. The project director has recruited a project evaluator at the University of Hawai'i at Manoa, and they meet regularly for this purpose. Two main aspects are the project's impact on the health care and academic sectors of Hawai'i. A strategy for evaluating the former is being developed in cooperation with health administrators and the respective communities. Monitoring of the curriculum occurs through regular meetings of the KOCC, periodical communication between students and their respective schools, and weekly curriculum tracking by the curriculum coordinator of each team's activities, learning issues and group process issues.

At the **national Community Partnerships Programme** level, involving all seven projects and funded in part by the Kellogg Foundation, a special "cluster evaluation" is designed to collect information that will help not only the individual projects but the programme as a whole. A team from the Office of Medical Education Research and Development at Michigan State University has been appointed by the Kellogg Foundation as programme evaluators. They are looking across projects or groups of people to identify common threads and themes. They want to identify not only what happened but also why, by looking for factors that contribute to, or constrain success. They are seeking information in a collaborative way, allowing all players in the programme to share in the evaluation and to benefit. They treat all information in confidence by focusing on the main principles and collective perceptions.

Some Comments about Changes Ahead

Each stakeholder in the transition to community-based education and service has a position on the Board of Directors of Ke Ola O Hawai'i, Inc. and already experiences the pressure of the projected change. The organisational dynamics between the Board, the committees, the project staff, and the local communities can also be very challenging. Many of the old paradigms and ways of operating at the community centres and academic institutions require major modification - perhaps even abandonment, in order to accomplish the establishment of academic, community-based primary health centres that can be directly responsive to their local communities. The next four years of this transitional phase of the project may be very taxing for all the participants, but the common focus is on improving the health of the people - Ke Ola O Hawai'i.

References

Boud, D., & Feletti, G. (Eds.) (1991). *The challenge of problem-based learning*. London, United Kingdom: Kogan Page; New York, NY: St. Martin's Press.

De Vries, R.A., & Sparks, R.D. (1989). Community-oriented, primary health services: Lessons drawn from international experiences of the W.K. Kellogg Foundation. *Academic Medicine, 64*, 439-441.

Feletti, G. (in press). Inquiry-based and problem-based learning: How similar are these approaches in nursing and medical education? *Higher Education Research and Development* .

Galbraith, M.W. (Ed.) (1991). *Facilitating adult learning: A transactional process*. Malabar, FL: Krieger Publishing.

Hawe, P., Degeling, D., & Hall, J. (1991). *Evaluating health promotion*. Sydney, Australia: MacLennan & Petty.

McKillip, J. (1987). Needs analysis: Tools for the human services and education. A.S.S.R. Series, Vol. 10. Newbury Park, CA: Sage Publication.

World Health Organization (1988). *Learning together to work together for health*. Technical Report Series No. 769. Geneva, Switzerland: World Health Organization.

Annals of Community-Oriented Education
1993, Vol. 6, 141-150

CURRICULUM AND METHODS

Towards Change in Medical Education at the Free University of Berlin, Germany

Christoph G. Schmidt
Final Year Medical Student Free University of Berlin
Berlin, Germany

Abstract

Precursors and development of an ongoing change in medical education at the Free University of Berlin are described. Students initiated a reform project which became institutionalised at the Dean's office. In a joint venture, members of the planning group and academics developed a plan for a problem-based, primary care-oriented, parallel track. An account of the planning process, and an outline of the proposed curriculum, as well as barriers and pathways in the change process are presented.

Medical Undergraduate Education in Germany

The legal framework for medical undergraduate education in Germany is provided by the Medical License Regulation, as part of the Federal Physician Regulation. Entry-requirements include thirteen years of primary and secondary school. The admission process is centralised for the whole Federal Republic; only some 15% of the applicants are selected directly by the medical schools through interview.

The six-year MD programme consists of a preclinical phase of two years (basic sciences, no contact with patients), a first clinical phase of one year (no contact with patients apart from basic physical examination), a second clinical phase of two years (most of the clinical specialties, little bedside-teaching), and the final year which is the only phase with ward experience through three rotations, including medicine and surgery. The programme is strictly discipline-orientated with lectures, laboratory practicals, seminars, and bedside-teaching (Fig. 1).

Each phase of the undergraduate programme is followed by a national examination; those following the clinical phases are Parts I-III of the German National Board Examination. Examiners for the oral examination are appointed by local examination boards, the

---

Requests for reprints should be sent to Ch. Schmidt, c/o Planungsgruppe Reformstudiengang Medizin, Universitätsklinikum Rudolf Virchow, Freie Universität Berlin, Spandauer Damm 130, D-1000 Berlin 19, Germany.

Multiple Choice Question examinations are organised centrally by an institute on behalf of the Government. Since federal requirements for the curriculum, as well as for examinations provide a tight legal framework, there is only very limited scope for medical schools to introduce real change. Hardly any of the medical schools reward teaching; qualifications for higher teaching positions are research, value of research grants, and advanced patient care.

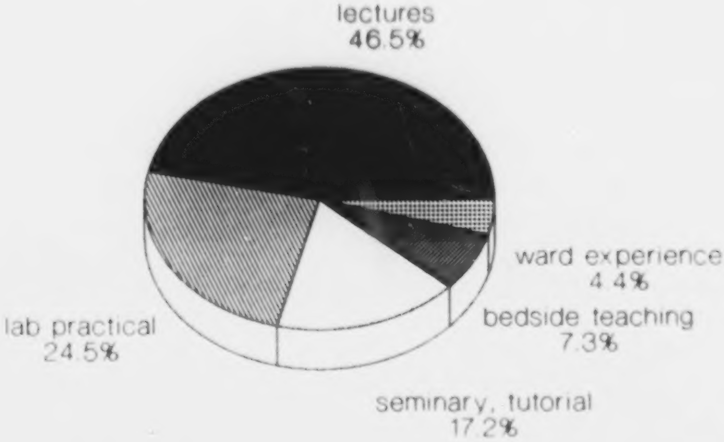


Figure 1. Breakdown of Years 1-5, conventional curriculum, Free University of Berlin

The newly qualified doctor practises under supervision as a "physician in training" for eighteen months before obtaining the licence to practise independently. Most physicians continue their postgraduate training in order to specialise. Postgraduate training and continuing medical education are regulated by the individual states and their local board of physicians.

A Student Initiative for the Improvement of Medical Education ("Inhalts-AG")

In 1988/89, when the authorities were about to celebrate the Free University's 40th anniversary, students from institutes (departments) which were in danger of being closed started to boycott their lectures. Within days this movement affected all Faculties and eventually became a nationwide students' strike. Academics of virtually all Faculties shared some of the concerns, such as the declining quality of education at their universities: increasing student intake, decreasing funds, and inappropriate curricula for present and future needs.

Medical students of the Free University soon started to organise task forces; one of these concentrated on improvement of medical education ("Inhalts-AG"). This task force produced a first draft of an alternative curriculum, including early patient contact, integrated rather than discipline-orientated learning, more emphasis on primary care and prevention, alternative approaches to patient care, etc. The draft was approved by more than two thousand medical students in December 1988 and was presented to the academic staff shortly thereafter. In April 1988, a one-week pilot block on "abdominal pain" was undertaken with primary care physicians, academics, and students on a voluntary basis.

Although the strike ended some two months later, the "Inhalts-AG" decided to continue to work for an improvement in medical education with a dual strategy: introduction of improvements within the framework of the present curriculum and continuing to plan a more fundamental reform. In order to improve the present curriculum, all three sections of the Free University's medical school (Faculty of basic sciences and the two university medical centres) set up committees which started to evaluate their courses and suggested minor changes. At the same time, problem-based courses in paediatrics and pathophysiology were instituted. Students formed independent groups for problem-based learning.*

The students were able to increase interest for a new curriculum among academics. This included the Dean of the Rudolf Virchow University Medical Centre, who became an active partner in this student initiative. In November 1989, a workshop on "Medical Reform Curriculum" with a considerable number of advocates from Germany and Switzerland was organised at the Rudolf Virchow University Medical Centre. Immediately afterwards, a hearing at the parliament of, at that time, West Berlin took place. The local administration for health and sciences expressed support for the reform initiative. However, the existing legal regulations were regarded as a major problem. In particular, the national examination system bind teachers, as well as students to a detailed list of topics and to a strict sequence of subjects. The prospect of exemption from this constraint, so that Faculties could experiment, was estimated to be rather slim. Support was promised for the exploration of an exemption for the "Berlin Model" as a specific experiment.

Planning Group for a Reform Track

Very soon the students became aware that progress with the planning would not be successful without more professional help. In December 1989, the board of trustees of the University provided the human and financial resources to implement a planning group at the office of the Dean of the Rudolf Virchow University Medical Centre. The planning group was to plan a) a reform track in case a change in the regulations would permit an experiment to be carried out; and b) a reform track within the present legal framework. In the Summer of 1990 the planning group began its work with one psychologist who was also a nurse, one sociologist, three physicians, a secretary, and four medical students. In addition, the Dean and some ten other students assisted on a voluntary basis. An academic council and an administrative council were also formed with members from all three Medical Faculties.

---

* See paper by Kiessling and Schwinge in this Volume.

A Problem-Based, Primary Care-Orientated Curriculum

The planning group began by studying curricula from McMaster University (Canada), Linköping University (Sweden), University of Limburg (The Netherlands), University of New Mexico (U.S.A.), the Private University of Witten-Herdecke (Germany), drafts from the "Murrhardter Kreis", Robert Bosch Foundation (Germany), and rough concepts from the "Inhalts-AG", Berlin. Visits were paid to the above programmes to attend conferences, and for informal meetings. People involved at different levels of these programmes were interviewed to learn from good and bad experiences. Particularly the latter were sometimes difficult to discover, although they are important for curriculum design. In order to familiarise members of the planning group, as well as a wider group of academics with relevant innovations in medical education, experts from various institutions were invited to Berlin for conferences, workshops and meetings. Task forces were formed for planning parts of the curriculum, small-scale experiments, and conferences. The whole planning group and Inhalts-AG met once a week, in order to discuss drafts from the task forces, to provide the task forces with recommendations for further work on the drafts, and to combine the parts into a new curriculum.

During the first year of planning it became clear that the improvements for medical education were not achievable within the existing legal framework. The planning group, therefore, concentrated on developing a curriculum that might be permitted as an experiment. A preliminary rough draft was used for a three-phased dialogue between the planning group and the departments. The heads of departments were asked to review a list of learning issues in their respective specialty (including the items of the present catalogue for the federal examinations), to add items they found missing, and to group the items under first priority (definitely to be included in the new curriculum), second priority (desirable), and third priority (optional, less or not important). The professors were also asked to consider theoretical or practical relevance with regard to primary health care when grouping the items. A reasonably short list of first and second priority items was usually generated. The priority list was taken as a basis for the compilation of topics for problem-based blocks. Primary care physicians were consulted and asked to evaluate the preliminary draft. This draft with integrated topics was brought back to the departments for discussion and amendment. Iteration in this fashion led to the compilation of the final draft by the planning group. At the same time parts of the preliminary draft were presented to the academic council, academics, students, and the public at meetings and conferences. Occasional newsletters provided information about the progress of the project. A two-week block on "perception: vision" tested a part of the curriculum with 60 students. In May

1992, the blueprint was completed. The draft was published and submitted for approval to the boards of all three Faculties of Medicine of the Free University.

Main Characteristics of the Blueprint

The reform curriculum takes into account the duration of study as prescribed by the federal regulations, as well as the guidelines of the European Council. The curriculum occupies six years with a minimum of 5500 hours of instruction. With regard to the German university system and the need of about 50% of the students to earn money, each of the first five academic years consists of two terms, each with an average duration of 14 weeks. As in the traditional curriculum and as prescribed by the federal regulations, the final year will consist of clinical clerkships with a total duration of 48 weeks.

The proposed curriculum is arranged in three phases which roughly correspond with the structure of the present curriculum in Germany. Phase I (terms 1-4) includes basic sciences and first practical experiences, Phase II (terms 5-10) includes health problems from the beginning to the end of life, and Phase III (terms 11 and 12) includes electives. The phases are structured by themes in blocks of several weeks' duration.

Phase I starts with an introductory unit. Students are familiarised with the programme, its methods, and perception of patients and colleagues, as well as themselves as students and future physicians. Thus, perception is the title of the first block. The following blocks are concerned with locomotion, respiration, circulation, metabolism, inflammation and immune response, coordination and control, sexuality and reproduction. A block on first aid and a nursing practical section are part of Phase I.
Phase II consists of blocks on pregnancy, birth, the newborn, infants, adolescents, midlife (including mastering life, pain, occupational and environmental hazards, alcoholism, etc.), neplasia, and old age (including degenerative diseases). Several clerkships are also required.
Phase III includes an elective in public health or related fields, as well as 45 weeks of clinical clerkships.

The reform programme features a less than traditionally strict separation of preclinical and clinical education. Early patient contact, training in communication skills, more problem-based than discipline-orientated learning, and more hands-on experience, are innovative characteristics in the proposed curriculum.
To facilitate planning, a grid was used with nine vertical strands representing areas of learning, and a number of horizontal strands representing timing and topics for the blocks. A learning event may integrate the subjects of more than one vertical strand. An example of a planning grid for a block is givin in Table I.

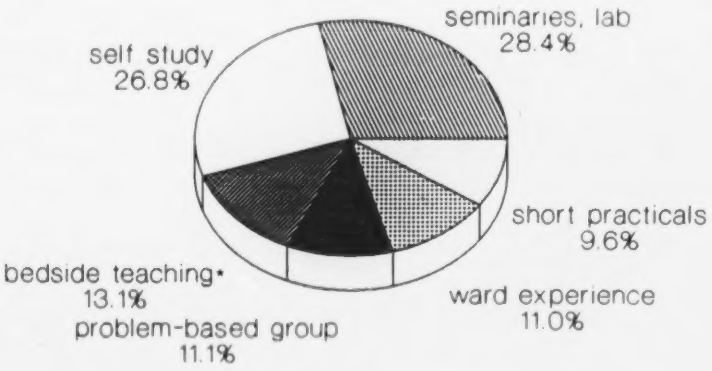
Table 1. Example of a planning grid for one block of study in the proposed curriculum

Curriculum (excerpt)

Topics for the Small Groups	**Morphology** (macroscopic and microscopic anatomy, pathology, radiology)	**Function** (biology, physics, chemics, physiology, biochemistry, microbiology, laboratory medicine, pathophysiology, pharmacology)	**Health Sciences** (sociology, epidemiology, economy, public health, statistics and data processing)	**History Taking, Physical Examination, Diagnostic Methods, Emergency Medicine**	**Interpersonal Skills** (doctor-patient relationship, interaction with other health care professionals)	**Methods of Scientific Working** (theoretical concepts of science, information management, essays and thesis)	**Basics of Medical Reasoning and Acting** (medical history, philosophy, ethics, etc.); **Studium Generale** (optional learning events, not necessarily within medicine; contact with other faculties is encouraged)	**Practicals and Preceptorships**
Vision (3 weeks)								
Squinting	structure and site of the eye I: orbits, lids, lacrimal apparatus, extra-ocular muscles	mechanisms of protection, tearing; vision I: coordination of eye movements (spatial vision, visual acuity, double vision)	epidemiology: principles of early detection of diseases (e.g. testing vision)	physical examination: alignment of the eyes, eyelids, conjunctiva, sclera, pupils, extraocular movements	eye-contact and visual behaviour with (squinting) patients; work-up of experiences from the practicals; achievements of perception	influence of motiation and emotion on learning	pathogenesis and salutogenesis	facilities for people with vision disorders
Red Eye (conjunctivitis, glaucoma, foreign body)	structure of the eye II: conjunctiva, sclera, anterior chamber, lens, iris	production and absorption of aqueous humor; vision II: pupillary function and innervation, dark adaption, convergence; mydriatics and miotics, medication for glaucoma and conjunctivitis	cancer register and cancer atlas of Germany	physical examination: foreign body, pupillary reactions, convergency; pharmacological agents	subjectivity in perception, misperceptions; systematic observation of the doctor-patient interview	learning places, organisational means, factors of disturbance	visual illusions (Dept. of Physics)	ophthalmologist; optician
Shortsightedness	structure of the eye III: posterior chamber, retina, visual pathway and visual cortex	vision III: refraction and refraction disorders, colour vision, visual process	importance of vision in the "information-society"	charts of visual acuity, tests for colour and peripheral vision	attention, refusal of perception; importance of visual impairment: own experiences	problems and problem-solving	the physician and the German literature (Dept. of German Literature)	social service

BEST COPY AVAILABLE

The formats for Years 1-5 reflect a more student-centred approach: Central to the curriculum will be small problem-based groups with academics and practitioners as tutors. Other small group activities will include diagnosis, emergency medicine, and interpersonal skills training. Seminars and courses in morphology, function, health sciences, etc. will provide general overviews, excercises, laboratory experiences, and opportunities to discuss with specialists topics that may be difficult to handle in the problem-based groups. Most of the topics of the seminars relate to aspects that are being studied by the problem-based groups at the same time. Short term experiences (half a day per week) in primary health care settings and long term experiences in clinical clerkships (three to six weeks) will account for approximately a quarter of the scheduled time. A minimum of nine hours per week are scheduled for individual study (Fig. 2).



•bedside teaching includes diagnostics, emergency medicine, and interpersonal skills training

Figure 2. Breakdown of Years 1-5, Proposed Reform Curriculum, Free University of Berlin

Present and Future

The organisation of the reform track will be coordinated by the planning group. More detailed planning of the curriculum, further small scale experiments, and teacher training are being carried out. An increasing number of academics, practitioners, and students are involved in the preparation of this curriculum with the help of outside experts. The boards of all three medical Faculties, as well as the Senat of the Free University have approved the draft curriculum.

The reform track is planned to run as a pilot for approximately four years. Internal and external evaluation of the programme and its participants will help to improve and adjust the curriculum for possible extension and expansion of the model.

Some 640 students are at present admitted annually for their first term at the Free University of Berlin. It is planned to take 60 students per year into the reform curriculum. Candidates usually apply through a central institution (see above) and list their preferences. The reform track at the Free University of Berlin could, therefore, be nominated as a preference.

Provided the necessary legal, administrative and financial conditions can be met, the experiment could be started by the Autumn of 1993.

Although the Ministry of Health indicated some interest in the reform curriculum, it has been reluctant to consider a relaxation of the medical licence regulations for an experiment to take place outside the present legal framework. However, there is some hope. In 1991, when the funds for the planning group were extended, the board of trustees agreed with the local government to ask the German Science Council for an external evaluation of the blueprint for the reform curriculum. The German Science Council is a committee of scientists and ministers appointed by the President of the Federal Republic of Germany to advise the Federal Government on educational affairs. The Council received the document in May 1992. In July 1992, the Science Council issued guidelines for the reform of medical education which are very close in many respects to the draft submitted by the planning group. The results of the evaluation of the reform proposal were expected from the Council by the Spring of 1993.

Barriers and Pathways

Since the introduction of biology-centred medicine in the 19th century, the paradigm for medical education in Germany has not changed. Some variations were introduced in recent decades. The last major reform of the Medical Licence Regulation took place in 1970. To remedy a lack of practical experience, bedside-teaching and an internship during the final year within the university programme were introduced. To increase awareness of psychosocial aspects, new subjects such psychology and sociology were added. To increase objectivity in examinations, extremely detailed lists of topics to be learned and centralised multiple choice question (MCQ) tests were introduced.

The reform did not turn out to be very convincing. Academics rarely received feedback on their teaching and felt less responsible for the curriculum. A rising student-teacher ratio caused overcrowding and a decreasing chance for practical experience. MCQ examinations turned the attention of students away from learning experiences and towards memorising lists of MCQs which are developed under the supervision of lawyers. The mere addition of new subjects did not materially improve the way in which medicine was taught. Some further "repairs" were introduced in the 1980s: oral examinations were added. In addition, because it was realised that the six year programme still did not provide sufficient practical experience, the "Physician in Training" phase was added to the university programme. However, apart from reduction of the residency salary by two thirds, nothing really changed.

Many of those who are now practising in teaching institutions still feel traumatised by this failed reform and, therefore, have themselves become impediments to change. Besides, in a system where career advancement depends on outstanding research, time-consuming commitment to teaching is not to be recommended.

The planning group was certainly not the first to invent the educational reform wheel in Germany, let alone in the world. A group consisting mainly of medical teachers, sponsored by the Robert Bosch Foundation, published an explicit outline for a new curriculum but was unable to find a medical faculty willing to adopt it. The Berlin planning group was inspired by this and other models. Even though the strike's "fantasy-draft" contained several key features of the blueprint recently presented to the German Science Council, a more organised understanding and a more rapid progress to a realistic plan for a new curriculum would have been less easy without help from outside. At the start the importance of involving academics at an early stage was not fully appreciated by the students. There was also some resistance to release as yet less than perfect ideas that might help opponents to stop the project. Also, importing outside competence or complete concepts from elsewhere could well increase resistance. However, the students soon learned that the majority of academics were not interested. Some academics became upset because they felt that they might lose control. Some became very interested and devoted considerable amounts of time integrating their specialty into the draft plan or even participated in small-scale experiments. This in turn probably helped to foster an "informed consent" among some of those who will have to carry the teaching load. Another aspect that seems to facilitate a sense of ownership by academic teachers was the plan to begin with a limited pilot track. Logistic considerations, and specifically the experience of the University of New Mexico, convinced the reform group that an experimental track would be more likely to create an accepting climate of opinion among academics who are still feeling traumatised by government-driven reforms.

Consideration of the German university and health care systems has contributed to choosing a strategy of adaption rather than adoption.

Students as Change Agents, a Joint Venture of Students and Teachers

Although most of the characteristics of the change process in Germany are not unique, rarely are students found to be the major change agents. Some advantages became clear during the change process: students were disappointed with the existing curriculum but they did not share the frustration of those who had experienced decades of failed efforts to reform the system. Thus, students became a very strong force for change.

During the creation of the draft, cooperation between students and their teachers turned out to be very productive; students had better appreciation of the learning process, were more frequently prepared to travel, and were less expensive. They collected experiences from various innovative programmes and established contacts with other reform initiatives. Teachers had better insight into the teaching process, organisational expertise within their departments, and contributed clinical competence. Both groups gained increasing confidence in each other and set out to produce a plan that would satisfy every need.

In conclusion, mention should be made of the difficulty to be realistic. The reform project started as a student initiative during the student strike. Students are normally a fairly powerless group in the academic hierarchy and with a very rapid turnover. Nothing indicated possible success. Benevolent teachers advised their students to be realistic and to concentrate on activities that would further their career. The same may have been experienced by academics who took part in the reform project. However, a small group persisted and attempted what had been impossible in previous decades. Disappointments and uncertainty accompany the continuing change process and make it difficult to decide what is realistic and what is not. Yet the experiences described in this paper would seem to indicate that a certain degree of irrationality can be very productive.

Acknowledgements

This has been a joint venture by students and academic staff. The author wishes to acknowledge the valuable help and inspiration of Professor Dieter Scheffner, the chairman of the Planning Group, Professor Robert Wiedersheim, consultant, and the students and staff of the "Inhalts-AG" and Planning Group.

Annals of Community-Oriented Education
1993, Vol. 6, 151-157

Student Initiative in Problem-Based Learning

Claudia Kiessling and Ingela-Toa Schwinge
Year 5 Medical Students, Free University of Berlin
Berlin, Germany

Abstract

At the Free University of Berlin a group of students introduced a specific form of problem-based learning that, in contrast to paper cases, integrates history taking and physical examination of patients into the concept of problem-based learning. As the students study in a traditional German curriculum they organised this activity in addition to their regular courses.

Medical Education in Germany

Medical education in Germany occupies six years (twelve semsters) including two years of preclinical, three years of clinical studies, completed by a so called "practical year" (three/four months rotations). After these six years, eighteen months of so called "Arzt/Ärztin im Praktikum" (doctor in practice) has to be undertaken to obtain the licence to practise as an independent physician.

Four main examinations have to be passed. The first, after two years, is a preliminary medical examination ("Physikum") with a multiple choice question (MCQ) test and an oral examination. After three years, medical students take the first part of the "Staatsexamen" (national examination), with an MCQ test, after five years the second part with an MCQ test and an oral examination, and after six years the third part of the "Staatsexamen" with an oral examination. The MCQ tests are set nationally. The oral examinations depend on the examining professors.

Altogether, German medical students have to study 40 different disciplines, 12 during the preclinical years, 11 in the third year and 22 disciplines in the fourth and fifth years. During the practical year, medical students work on the wards of departments of internal medicine, surgery and one elective discipline.

The three "Gegenstandskataloge" (GK) with detailed description of content to be studied are the obligatory guidelines for the three national multiple choice tests. Each department tries to cover the content of the GK in lectures, practicals or seminars. Course assessment depends on each department. Most of them choose MCQs, some also set written or oral

Requests for reprints should be sent to either author: C. Kiessling, Emserstr. 12-13, W-1000 Berlin 31, Germany or I-T. Schwinge, Krefelderstr. 3, W-1000 Berlin 21, Germany or c/o Planungsgruppe Reformstudiengang Medizin, Schwesternhaus 2. OG, UKRV, Spandauer Damm 130, W-1000 Berlin 19, Germany.

examinations, some do not assess at all. There is no training for, and hardly any evaluation of teaching or assessing in Germany.

How do Students Gain Diagnostical and Clinical Skills in Berlin?

The main concept of the German curriculum is that students are supposed to gather theoretical knowledge and basic skills during their five years at their university and to transfer this knowledge into clinical practice during their sixth (practical) year.

The preclinical years are mainly designed to gather theoretical knowledge in the basic sciences, so that the acquisition of diagnostic and clinical skills is not stressed. The course in the dissection room lasts one semester and is the first contact with a "patient" for students. The seminars in physiology and biochemistry are enlivened by laboratory demonstrations or exercises. There was a change in the Medical Licence Regulation (Approbationsordnung) in 1989 when clinically orientated seminars were introduced into the preclinical years to reduce the gap between preclinical and clinical education.

Before the students take their "Physikum" they have to complete two months of nursing during their semester holidays in a hospital of their choice.

During the third year the courses on microbiology and clinical chemistry provide the opportunity for familiarisation with laboratory work. The first "real patient contact" comes at the end of the third year. In physical examining courses (2-4 hours once a week for one term) students are to learn how to take a history and how to examine a patient in various clinical diciplines.

From the fourth year onwards clinical courses are conducted on hospital wards (10-15 students per ward). Students go there once a week for 2-4 hours for one or two terms. They either have the opportunity to examine a patient or a doctor gives a short lecture. Each specialty gives lectures where patients are sometimes presented.

Most of the diagnostical and clinical skills are learned during the four months of clinical clerkships that students have to perform during their semester holidays (between the Summer and Winter semester, lasting 2 1/2 months in Winter and 3 months in the Summer). These clerkships have to be completed between the "Physikum" and the second national examination. Most of the students spend at least two months on a hospital ward of their choice, one month in a general practice and one month at any other site within the National Health Care System. Students can choose any hospital ward or practice but they have to arrange this for themselves.

The sixth year is intended for the aquisition of diagnostical and clinical skills, when the students are expected to apply their theoretical knowledge to practical work on the wards.

Problem-Based Learning in Berlin

After the students' strike in the Winter of 1988/89 a group of medical students started to discuss problem-based learning (PBL) in the context of changing the curriculum. Theoretical knowledge and practical experience gained in different European universities, mainly at Linköping in Sweden and Maastricht in The Netherlands, pursuaded the authors to experiment with PBL in their own educational context.

Since the Winter of 1990 the authors have helped student groups, mainly from the preclinical years, to work with PBL. As the authors were involved in the Planning Group for a Reformed Curriculum at the Free University of Berlin (Planungsgruppe, 1992) they could not start their own PBL group before the Summer of 1991 (Table I).

First Berlin Clinical PBL Group

A group of seven students in their fourth and fifth year started in the Summer of 1990 to work for one semester with paper cases from the workbook "Clinical Problem-Based Learning" (Waterman et al., 1988) However, we found that these cases were problems in North America. In particular the cases were too theoretical and, as the group had little clinical experience, it wanted to integrate hands-on experience with PBL. Especially history taking and physical examinaton of patients on a ward were held to be important by the group. Internal medicine, especially cardiology, was chosen as the first topic area. A concept for the organisation of the PBL sessions was worked out and presented to the head of the department who was asked to choose a patient every two weeks for history taking and physical examination and to inform the responsible resident medical officer about the group's plans. The patients should have common and frequent problems with a wide range of different causes. This head of department was very willing to assist, which helped to find a ward, a resident and a room in which to meet.

What Happens During These Sessions?

One student is chosen to be the "tutor". This means that he or she is in charge of collecting the patient's notes. All go to see the patient, and one member of the group takes the history, and another carries out the physical examination. The others may ask additional questions or carry out special examinations. This takes about 30 to 40 minutes, including a short evaluation of the history taking and examination. The duties of tutor, history taking and physical examination are rotated for every new session when a different patient is seen. In the group's room the patient's history and physical examination are summarised. Possible hypotheses are defined, explained and sorted. Possible diagnostic methods and laboratory investigations are discussed for refining the hypotheses. The student who is the tutor presents only the information which is asked for by the group. The tutor also collects the learning issues that are identified during the meeting.

Table I. Existing problem-based learning groups in Berlin (October 1992)

Working since	Actual year of study	Tutor	Paper cases
wi.90	year 3	physician, now no tutor	yes
wi.90	year 3	no tutor	yes
wi.90	year 3	no tutor	yes
wi.90	year 3	physician	yes
su.91	year 2	year 3 student	yes
su.91	year 2	year 5 student, now no tutor	yes
su.91	year 3	physician	yes
su.91	year 3	physician	yes
su.91	year 3	year 5 student	yes
su.91	year 3/4	year 6 student, now no tutor	yes
su.91*	year 3-5	no tutor	no
wi.91	year 3/4	no tutor	yes
su.92	year 3-5	no tutor	yes
su.92	year 3-5	no tutor	yes
su.92	year 3-5	no tutor	yes
wi.92	year 1	physician	yes
wi.92	year 3	physician	yes
wi.92	year 3	year 4 student	yes
wi.92	year 3	year 3 student	yes
wi.92	year 3	year 3 student	yes
wi.92	year 3	year 5 student	yes
wi.92	year 3	year 5 student	yes

wi. = Winter semester; su. = Summer semester
* First Berlin Clinical PBL Group

At the end of the meeting, the responsible resident is invited to join the group for fifteen minutes to explain x-rays or why specific examinations were made, why particular treatments were chosen and so forth. This is very important for reconsidering the group's reasoning and its learning issues.

The week between the meetings on the ward is used to work on the learning issues in addition to attending regular courses. During the second meeting the new learning is presented and discussed. This is followed by the group's diagnosis of the patient's problem and a discussion of appropriate treatment. If there are any remaining questions, there is always the possibility of asking the resident, the professor or another resource person. Our meeting in the next following week will again be on a hospital ward. Thus the group meets for two to three hours, one week on a hospital ward and in the next week to discuss the learning goals.

Advantages of this PBL Group Concept

Such PBL sessions are easily arranged, as there is a large number of hospitals in Berlin, and easy for the staff, as the students work independently.

The students' motivation is high because they define their own needs, learning style and content. The students can discuss aspects which are usually neglected in their medical education, such as the psychosocial aspects of well-being.

The cases are not artificially presented or constructed such as paper cases, because the students can interact with the patient as a person.

The small group provides the opportunity to practise history taking and physical examination, and to evaluate these two activities with the peer group. The student who is the tutor does not know the patient's diagnosis and can, therefore, take part in the process of hypotheses generation. He or she first comes across the diagnosis in the patient's notes when responding to the group's questions concerned with laboratory and diagnostic findings. Like a traditional PBL tutor, he or she is not allowed to reveal the diagnosis.

Discussion of the laboratory tests, diagnostic procedures and therapy is profitably followed by discussion with the resident who is expected to justify the procedures and the reasons for the therapy. In contrast to reading books, this helps the students to learn how problems are handled in clinical reality and what (new) therapies are used.

The students learn how to use resource persons and other sources of information more effectively because they are better prepared in what to ask for. When students have experienced this way of learning they demand more from their regular courses - form and content. The increasing security of enhanced self-esteem and self-confidence gained by students in their PBL group encourages more active participation in their courses.

Difficulties to Overcome

This special type of PBL group is only suitable for students in their clinical years who have already completed a course on examining patients. Students need to be familiar with techniques of history taking and physical examination. Participation in the PBL group improves these skills; it does not help to learn the basics.

Students have to agree on common goals for the entire semester, how to manage teamwork and so on. Discipline in attending meetings and in working on learning goals is absolutely essential. After four years of traditional medical studies students have been shaped into certain types of reaction and thinking like being passive, receiving rather than contributing, competitive, and hierarchically orientated. This is hard to overcome. Especially the implementation of a final round of evaluation is difficult to establish as it is unusual for students to criticise one another in the regular courses.

To stress diagnostic methods, e.g. investigations like radiography or laboratory tests, is very tempting, and students tend to forget to work on basics like the pathogenesis. It is even more detrimental when discussion about therapy is neglected, once a diagnosis has been established.

The consultation with the resident at the end of the meeting is vital to ensure that important information is not missed; learning goals may well change after having talked to the doctor. As the resident has little time to spare, it is advisable to reconfirm the appointment with the resident in good time.

We are aware of the fact that our investigations are an additional burden for patients, especially fo those in teaching hospitals but at the moment we do not see a solution for that problem.

Conclusion

There are no hard data for the affect on students who join this type of PBL group in addition to the traditional curriculum. However, a few observations and experiences may be mentioned. The group worked in a more autonomous and self-directed manner in contrast to the closely scheduled traditional programme. Discipline was good; the group succeeded in meeting once a week for two semesters, mainly because learning was fun and effective. Members felt that they had grown through being in this learning group.

It was exciting to see that the professors who were asked for help liked to provide opportunities for learning on the ward. In fact, they were rather pleased that students were interested in their education and formulated their own needs.

Since 1990 the authors have helped preclinical students to organise problem-based learning groups where they meet once a week in addition to their regular curriculum. They choose paper cases (from various other universities) that relate to the main topics of their actual studies. Doctors and students who could be motivated to become tutors joined the group during their free time and without payment. A few groups were not interested in having a tutor and decided to work on their own. One student in the group chose a paper case and took care of the group's progress.

After presenting our clinical PBL group concept, other clinical groups became interested in organising their PBL groups on hospital wards. This procedure to establish practice-orientated learning is only a small step towards a general reform of medical education but it is an easy way to initiate improvements.

References

Planungsgruppe Reformstudiengang Medizin. (1992). *Entwurf eines neuen Curriculums*. Berlin, Germany: Universitätsklinikum Rudolf Virchow der Freien Universität. (Mimiograph).

Waterman, R.E., Durban, S.L., Mennin, S.P., & Kaufman, A. (1988). *Clinical problem-based learning: A workbook for integrating basic and clinical sciences*. Albuquerque, NM: University of New Mexico Press.

Annals of Community-Oriented Education
1993, Vol. 6, 159-161

The Reform of Medical Education at the Three-Year Junior Medical Faculty in Jinzhou Medical College of China

Yongchen Guan, Youzhi Shao and Mingda Yang
Jinzhou Medical College
Jinzhou, Liaoning, People's Republic of China

Abstract

In China 90 million people live in the countryside. It is therefore important to train doctors effectively in a short time, in order to meet the needs of rural area community hospitals and to improve the rural community health service generally.The curriculum for three-year junior medical education has been reformed at the Jinzhou Medical College, so that medical students can become more effective clinicians in treating and preventing diseases and promoting health, as well as becoming self-directed learners.

The Basic Idea of the New Curriculum

The 1990-063 document of the Chinese National Education Committee emphasized the importance of three-year junior medical education to train doctors who will undertake the basic medical health services in rural communities. Students will be helped to learn how to study, to develop individual study habits and to acquire an orientation to community health care. Teachers will be expected to implement an organ or disease systems curriculum. Many teaching activities will be carried out in rural communities to meet the needs of rural areas. Teachers will be expected to improve their teaching techniques and to emphasize the training opportunities of service and scientific research.

At present there are obvious shortcomings in traditional curricula which are discipline or subject based. Only late in the course can students enjoy clinical practice. Even then the independent and decentralized subject courses do not allow the students to gain a comprehensive clinical problem solving competence. Also, because the basic sciences are separated from clinical medicine, there is much material that is out of date, repetitive and not applicable in practice. These courses, with their weighty textbooks and heavy demands on the students, waste time and depress the spirit of the students. Generally speaking, in most schools the curriculum of three-year junior medical education is merely a compressed version of the full undergraduate curriculum.

The revised curriculum is based on organ systems and has reorganised the basic medical course to combine micro- and macroc-physiology with pathology, etc. This model is suitable for our students' approach to learning and forms a new medical knowledge system in an orderly way, step by step. The new curriculum omits out of date, redundant knowledge and effectively combines basic and clinic medicine.

Requests for reprints should be sent to Yongchen Guan, Jinzhou Medical College, Three-year Junior Medical College, Department of Medical Education Research, Jinzhou, Liaoning, People's Republic of China 121004.

Resume of the New Curriculum

Sequence of study

The seven parts of the curriculum are: public courses; general basic medicine; basic medicine based on organ systems; general clinic medicine; clinic medicine; preventive medicine; and clinic case seminars.

The public courses consist of politics, ethics and morals course, medical theory of education, physical training, and foreign language.

The basic general medicine consists of seven parts: morphology and function; metabolism and regulation; basic medical genetics; basic immunology; pathogenic microbiology and parasitology; basic pharmacology; and basic pathology.

The above seven parts prepare the students for the basic medicine course, based on an organ systems approach which emphasizes the relationship of organs to physiology, morphology and pathology: skin and connective tissue; respiratory system; cardiovascular system; gastrointestinal system; nervous system; blood and haemopoietic system; metabolic and endocrine system; urinary system; reproductive system; and sense organ system.

This reorganisation of the ten above sections prepares the students for the clinical course.

Thus students can gain an enhanced ability in solving clinical problems using the knowledge of basic medicine.

The general clinical medicine is divided into two parts:

1. Internal medicine diagnosis system.
   Symptom physical examination; electrocardiography and ultrasound; radiology; tests; and medical Latin.
2. Basic training in surgery.
   Operative surgery; general surgery; and specific anatomy.

Four diagnostic courses are arranged to provide the students with a diagnostic foundation. Specific anatomy has been moved from basic medicine to clinical medicine, to reduce the gap between anatomy and surgery.

The clinical medicine courses includes: internal medicine; surgery; gynaecology and obstetrics; paediatrics; traditional Chinese medicine; otolaryngology; ophthalmology; dermatology; and neurology and psychiatry.

Characteristics

The teaching hours have been increased. Common diseases in the rural area are introduced in the lectures on internal medicine. The emphasis of surgery is on abdominal diseases. The emphasis is on developing clinic thought and patient care, and on increasing the proportion of lectures related to preventive care.

The theory and practice of preventive medicine includes medical psychology; environment, prevention and control of disease; health statistics; epidemics of infectious disease; rural primary medical health care; health education; and the practice of primary health care. All these courses are located in community hospitals or in a rural area. Clinical case discussion courses are arranged in the first four semesters. The course in the first and second semester integrates with the basic medicine courses. The purpose is to urge the students to study basic medicine by case discussion, to stimulate the students' motivation and interest, and to help the students to understand patients early, and to train the students' intellect. The case discussions during the third and fourth semester are combined with the clinic course. The aim is to teach the student diagnosis and treatment of patients.

Enhancing Competence in Clinical Practice and Rural Community Health Service

In order to produce more effective clinicians the new curriculum devotes almost the same amount of time to clinical medicine as the full undergraduate course. Twelve weeks of extra curricular medical practice is concentrated on clinical medicine. During this period the students practice clinical skills and technique. Nursing of patients is also included.

Prevention and treatment of frequently occuring diseases are emphasized in the clinical medicine course through lectures and practical work. Training for rural community health service occupies 32 weeks of clinical practice in hospitals attached to the College and in rural community hospitals. Moreover, preventive theory and practice is arranged throughout the whole curriculum. The period of rural practice includes investigation of rural health care and prevention of epidemics. The students are asked to suggest improvements to the local authorities.

Textbooks to Contain Practical Knowledge and Cultivate Independent Study

Clinicians are involved in the writing of the textbook on basic medicine. They decide what knowledge is necessary for the basic medicine training. The learning objectives are set out at the beginning of every chapter. Key words, questions and references are part of every chapter. The strucure of the text is designed to assist students' understanding of important concepts, to guide independent study, and to teach students how to learn. A library of textbooks and videotapes has been established. Class time does not exceed 26 hours in any one week, so that students have time for individual study.

Annals of Community-Oriented Education
1993, Vol. 6, 163-172

Maternal and Child Health Training at the Gezira Medical School

Omer Ahmed Mirghani
University of Gezira
Wad Medani, Sudan

Abstract

This paper illustrates how defined objectives in relation to Mother and Child Health can be attained by medical students. The design of this curriculum makes it possible for the various clinical disciplines to develop the students' competences in a cumulative and integrated fashion by repeated exposure and with increasing sophistication and responsibility throughout the curriculum.

Undergraduate Curriculum

The Faculty of Medicine is committed to the general philosophy of the Gezira University: "The University shall pursue the study of the Sudanese Environment, and in particular the rural areas in order to identify their problems and to conduct research thereon." Curriculum development considered society's needs, structure and content of the subject matter and learner's needs. This led to the formulation of the objectives of the curriculum.

The Faculty of Medicine implements six strategies in order to achieve its objective (Rahim, 1989): Problem-based learning modules, community-oriented and community-based training, integrated learning, training within existing health facilities, team work and interdisciplinary approach, staff development and democratic decision making. The curriculum is composed of 10 semesters (5 calendar years); each semester has 16 weeks, except the last three semesters which extend to 18 weeks.

The curriculum integrates basic, clinical, community and social sciences throughout the whole period, and is divided arbitrarily into three phases:

Phase 1. A three-semester introductory phase of a general nature where more emphasis is placed on exposure of the student to health problems and on man and his environment.

Phase 2. A four-semester organ system phase where the study of body/organ systems becomes the focus of integrated learning.

Phase 3. A three-semester clerkship, where knowledge, attitudes, bed side and community skills are further consolidated by an intense apprenticeship rotation through medicine, surgery, obstetrics & gynaecology, child health, mental health and primary health care.

Maternal and Child Health Objective

Maternal and child health (MCH) problems are among the major health needs of the

Requests for reprints should be sent to O. Mirghani, University of Gezira, Faculty of Medicine, P.O. Box 20, Wad Medani, Sudan.

Sudanese community. The maternal and infant mortality rates in the Sudan are notoriously high, estimated as 655 per 100,000 (Koroum, 1972) and 118 per 1000 live births (Population Reference Bureau, 1985) respectively. Maternal and child health problems have many features in common. They affect a large sector of the population, their prevention and control is feasible and possible, they affect vulnerable groups of the community, and their solution requires an intersectoral approach. Proper MCH service is expected to reduce the maternal, perinatal, infant and childhood mortality and morbidity and promote health and the physical and psychological development of the child and adolescent within the family and consequently to improve future generations and their positive attitude towards health. The following are the specific MCH objectives in the undergraduate curriculum:

1. Identify, manage and prevent prevalent diseases in the area, particularly those affecting mothers and children.
2. Provide care during pregnancy, childbirth and post-natal period for mothers and the newborn.
3. Supervise infants, particularly the promotion of nutrition, growth and development, and prevention of infection (immunisation).
4. Advise on and care for fertility regulation through proper timing and appropriate spacing of pregnancy.
5. Supervise the physical and psychological development and nutrition of the child and adolescent.
6. Upgrade family competence with special reference to the prominent role of the mother in child rearing, promotion of health and prevention of disease.
7. Improve environmental sanitation at all stages.
8. Provide health education, especially education relevant to MCH.
9. Acquire the required interpersonal skills and attitudes in working with patients and their families, peers, doctors and nurses.

These objectives are distributed among 10 courses throughout the curriculum and are fully integrated in these courses (Table I).

The courses included in Phase I expose the students to the main health problems of the community, including MCH problems. The students learn how to identify and investigate health and health related problems. Through lectures, small group discussions and group exercises they study the methodology and then make field visits to collect data from health institutions, patients, health personnel and other members of the community. They analyse the data and discuss the results during their presentations in seminars. Finally they write a scientific report on their projects. The students acquire skills of organising a field survey and techniques of interviewing and communicating with patients, their relatives and other members of the community. The students' attainment in those courses is assessed by written examination, attendance and performance during the field visits, small group activities and seminars, and reports on projects.

Table I. Sequence of courses in the Gezira curriculum with MCH involvement

PHASE I

1. Introduction to Medicine and Study of Medicine
2. Growth and Development
3. Doctor and Society
4. Field Training Research and Rural Development Programme (FTRRDP) Phase I (Hamad, 1982)

PHASE II

5. Primary Health Care Centre Practice and Family Medicine (PHCCP and FM) (Mirghani et al., 1988)
6. Problems of the Genito-Urinary system
7. FTRRDP Phase II

PHASE III

8. Clerkship in Obstetrics & Gynaecology
9. Clerkship in Child Health
10. Clerkship in Primary Health Care
11. Rural Residency (Saeed, 1984)
12. FTRRDP Phase III
13. PHCCP and FM

Phase II of the curriculum is made up of the system courses, the FTRRDP (Phase II) and the PHCCP and FM courses. During this phase, the level of involvement of the students is higher, they learn more about basic sciences, acquire clinical skills and practise in health centres and with families. In the system courses the basic sciences are integrated around clinical problems, and MCH objectives are scattered throughout those courses e.g. respiratory problems in newborn and children in the cardiopulmonary course.
Most of the basic sciences relevant to MCH are included in the genito-urinary, and growth and development courses. During Phase II of the FTRRDP course the students design projects and implement them in order to solve the problems already identified in Phase I, e.g. teaching mothers how to prepare oral rehydration solution or mobilising the villagers to build latrines.

In the PHCCP and FM course the students, under the supervision of the health centre doctor, contribute to the management of all health problems, so that the MCH objectives in this course (ante-natal care, immunisation, child care and health education) are achieved through practical training.

During Phase III of the curriculum the students assume more responsibility towards patients, acquire new skills and sharpen their existing skills. Their involvement is more towards participating and performing than just observing. This phase includes six clerkships, the last phase of the FTRRDP, and the Rural Residency course. The MCH objectives are included in the obstetrical & gynaecological clerkship, the paediatric clerkship, the primary health clerkship, the rural residency course, and the last phase of the FTRRDP course. The objectives are achieved through practical clinical training in the hospital, field visits, lectures, tutorials, and seminars. Students are assessed by written examination, clinical examination, attendance and performance during field visits, rural hospitals and seminars, and on reports of their evaluation project.

Courses

Introduction to Medicine and Study of Medicine (semester 2; duration 2 weeks). The main objectives are to enable the students to:1) identify the major health and health related problems in the community; and 2) discuss the scope and philosophy of the undergraduate curriculum and the methods of instruction and evaluation.

MCH problems are among the main health problems encountered and investigated by the students, their first exposure to MCH. During a field visit the students collect data from the hospital and other health units, from other institutions (educational, agricultural, etc.) and from villages and towns, analyse the data and present the results during a seminar. Such an exercise gives the students a holistic view of the major health problems, and the rest of the curriculum is designed mainly around those problems.

Growth and Development (semester 3; 4 weeks duration). By the end of this course the students should understand the anatomy and physiology of the human reproductive organs, the development and maintenance of the human embryo, and the structural, functional and behavioural changes that occur from birth to adolescence and old age. They should understand the problems of growth and be aware of the health needs at different stages of growth and development. This is purely an MCH course.

The instructional methods are lectures, discussion, tutorials, seminars, attending deliveries, films and examination of the newborn.

The students are assessed by multiple choice questions (MCQs) and essays, projected slides, performance during the seminar, and practical examination on the anthropometric measures of the newborn.

Doctor and his Society (semester 2; 2 weeks duration). In this course the students gain awareness of the importance of the social, psychological and cultural aspects and their effects on health, and basic knowledge about their society. They acquire communication skills and acquaint themselves with the code of medical ethics.

The students make two field visits to health institutions. They collect information from patients and their relatives during the first visit and from health workers during the second visit. They discuss the results of their work in two seminars. The rest of the course is in the form of lectures, small group discussions and reading assignments. MCH patients and their relatives comprise more than 50% of the individuals interviewed and studied.

The students are assessed by essays, product of group work, and performance during the seminar.

Field Training Research and Rural Development Programme (FTRRDP) (3 phases each of 4 weeks). This course (Hamad, 1982) gives the students opportunities for practical training in rural areas, to adopt a multisectoral approach for the solution of health problems, to work in a team and to acquire further skills in research and field surveys. It provides the staff with opportunities for relevant research and it engages the University in rural development which is one of the major goals of the University.

The course is composed of three phases. The students are distributed in small groups of 10 - 15. Each group also includes students from the Faculty of Agriculture and the Faculty of Economics and Rural Development. During Phase I the students reside in their assigned villages and conduct a field survey to identify the main problems of that village. During Phase II the students design a project which solve one of the problems identified in Phase I and go back to the village and implement that project. Phase III is used for the evaluation of these projects. During each Phase the students stay for 7 - 10 days in the village, and the rest of the course is spent on the University campus when they prepare their instruments for data collection, analyse the data collected, design their projects and write their reports. By the end of each Phase each group presents its product in a seminar and submits a report. During their stay in the village the students deliver health education which is mainly in the area of MCH and its related problems.

In addition to the field work the objectives of the course are advanced through lectures, small group discussion, reading assignments and seminars.

The attainment of the students is assessed by attendance - 40%, presentation of group reports in seminars - 30%, and the group report - 30%.

Primary Health Care Centre Practice and Family Medicine (PHCCP & FM). This course (Mirghani, 1988) enables the students: 1) through practice in the health centre, to acquire clinical skills, identify health problems in the community with their early presentation and ways of dealing with them at the primary health care level, and understand the role of various members of the health team; 2) through practice with families, to understand the structure of Sudanese families, the effect of family problems on health, and the role of individuals in the family; and 3) to discuss endemic diseases, primary health care (PHC), epidemiology and statistics.

As MCH constitutes the bulk of the problems of familie and of the activities at the Health Centre, the student should be able to: diagnose and manage simple diseases affecting pregnant women and children; conduct basic ante-natal care; advise on family planning and distribute contraceptive pills; monitor growth and development of children and identify abnormalities; advise on and administer immunisation; deliver health education, especially on nutrition; and teach family members.

This is a longitudinal course every Wednesday throughout semesters 5, 6, 7 and 8. The students are distributed among the seven health centres of Wad Medani town, and each student is assigned to a family. In the health centre the students take full responsibility for patients under the supervision of HC doctor. The course also includes lectures on PHC, endemic diseases, epidemiology and statistics, and discussion on family problems as presented by students.

Assessment is based on attendance at the health centre and with the family, students' activities as shown in their log books and family records, presentation of family problems, and MCQs and essays.

Problems of the Genito-Urinary System (semester 7; 7 weeks duration). Through this course the student should understand the anatomy, physiology and pathology of the genito-urinary system and should be able to investigate and manage the important problems that may arise. Basic sciences relevant to obstetrics, gynaecology, urology and nephrology are fully integrated around clinical problems with more emphasis on basic sciences at this stage.

Almost two thirds of this course is allotted to obstetrics and gynaecology, because this is the first time that students have adequate contact with hospital patients in obstetrics and gynaecology before they experience the clerkship (Table II).

Table II. The course is designed around 10 problems

Abscent testicles
Oedema with pregnancy
Urinary tract infection
Haematuria
Amenorrhoea
Infertility
Bleeding in early pregnancy
Intrauterine growth retardation
Renal calculi
Retention of urine

The main instructional methods are problem-based learning, small group discussions, lectures, tutorials, seminars and practical training which consists of hospital clinical rounds, attending and conducting deliveries, antenatal clinics, laboratory practicals in

bacteriology and pathology.
The assessment consists of true-false MCQs (40%), essay (30%), clinical examination (20%) and performance & attendance (10%).

Clerkship in Obstetrics and Gynaecology (9 weeks duration at the beginning of semesters 8, 9 and 10). It is a consolidation of all the contents of obstetrics and gynaecology with more emphasis on the clinical skills in diagnosis and management. The students' level of involvement is mainly participating and performing rather than just observing. The clerkship enables the students to acquire new skills and to perfect existing skills in history taking, examination, diagnosis and treatment of obstetrical and gynaecological problems. The first level of problems includes conditions which are common and/or serious, and/or preventable which the students are expected to diagnose and manage or evaluate management. The second level includes conditions which are considered to be less common and/or serious and/or preventable, so that the students' required level of competency is lower. All obstetric objectives are in level I and include: normal pregnancy, normal labour, normal puerperium, the newborn, abnormal pregnancy, abnormal labour, abnormal puerperium, operative obstetrics and obstetric analgesia and anaesthesia. Gynaecology objective are divided in level I and level II. Those included in level I are: abortion, ectopic pregnancy, trophoblastic disease, pelvic infection, abnormal vaginal bleeding, genital injuries, amenorrhoea, genital prolapse, urological problems, dysmenorrhoea, family planning, infertility, tumours of the genital tract, fistulae. Those included in level II are operative gynaecology, radiology and ultrasonography.

Students are posted to both University and Ministry of Health consultant units in the department of obstetrics and gynaecology at Wad Medani Hospital in groups of 5 - 10 students. It is a full clinical attachment, and the students are engaged in ward rounds, night duties, operative theatre sessions, combined (obstetric and gynaecology) referred outpatient clinic, antenatal clinic in the health centre, department discharge clinic, and hospital clinical meetings. Each student is assigned to 5 obstetric and 5 gynaecological beds.
The clerkship also includes 30 lectures, a weekly tutorial, a weekly session for case presentations and a weekly discharge clinic session.
The assessment consists of MCQs (25%), essays (15%), objective structured clinical examination (OSCE) (10%), clinical examination (40%), attendance & performance (10%).

Clerkship in Child Health (9 weeks duration in semesters 8, 9 and 10). This clerkship follows the clerkship in obstetrics and gynaecology. By the end of this clerkship students should be able to monitor the growth and development of children; diagnose abnormalities, and diagnose, investigate, manage and prevent common disorders in children. The objectives are ranked in level I and level II, similar to the objectives in the obstetrics and gynaecology clerkship.
Students are distributed in small groups, each group is attached to a paediatric unit in Wad

Medani Children Hospital. Students are engaged in all their unit's ward rounds, outpatient clinics and night duties. The clerkship also includes lectures, seminars, tutorials, discharge clinics and health centre visits.
Assessment includes MCQs (25%), essays (15%), (OSCE) (10%), clinical examination (40%), attendance & performance (10%).

Primary Health Care Clerkship (4 weeks duration in semesters 8, 9 and 10). This course enables the students to understand the PHC concept, approach, contents and components, to understand the relevant epidemiological concepts and methods, together with statistical concepts and methods for identifying health problems, delivery and evaluation of health services, to discuss the principles of PHC management, to conduct a rural hospital audit, and to deliver PHC in the community.
Students are distributed among four small groups, and each group conducts a community-based needs and resources assessment in a village. They identify a problem and design a plan for its solution (e.g. high risk pregnancy, growth and development of children, immunisation, diarrhoeal diseases, family planning, malnutrition). During their stay in the villages the students undertake MCH services, health education, antenatal care, child care, and distribution of oral contraceptive pills.
The instructional methods are lectures, field visits to villages and to a rural hospital, small group exercises, and presentation of group results.
Assessment includes written examination (30%), results of group and individual work and performance (30%), report by individual students on their work in PHC settings (30%), attendance and attitudes (10%).

Rural Residency (4 weeks). This course (Saeed, 1984) enables the student to know the organisation of the health services in the rural community; practise, assist or observe the activities performed by the rural hospital doctor, patients care, and administration, supervision of health personnel and health facilities in the area, as well as community involvement; observe, perform under guidance or independently specific skills; visit a health care facility and participate in its activities under supervision and/or independently; collect statistical data about the community situated around the rural hospital and write a critical scientific report.

The specific MCH Objectives include: observe and participate in MCH service delivered in the hospital or the community; understand the role of MCH personnel in the rural hospital and its community. Each student is sent to a rural hospital where she/he resides for one month, where the student participated in all the hospital activities and visits health facilities around the hospital. Assessment includes attendance in the rural hospital, performance in the rural hospital, final report of the student.

Evaluation

The training of MCH is continuously monitored by feedback from students, tutors, health personnel, and the community, as well as by the results of formative and summative examinations. All this information is discussed at the Faculty Board meeting when the results of the course are presented.

The Faculty appoints a staff member as a coordinator for each course who, in turn, appoints a student coordinator for the course. The staff coordinator is responsible to the Faculty Board that the implementation of the course is satisfactory and that the students could meet the objectives. The coordinator monitors the running of the course (by observations, questionnaire and mid-course examination) and makes the necessary modifications to rectify deficiencies. By the end of each course the coordinator obtains students' feedback through a questionnaire which is normally administered just a few minutes before the written examination, and all students are expected to respond. The questionnaire questions whether the students felt that they could meet the objectives, the usefulness and efficacy of the instructional methods, the relevance of course contents, the suitability of the training sites, the organisation of the course, the constraints and difficulties which faced the students, and the punctuality and usefulness of tutors without mentioning names. The coordinator also obtains information about the course and the performance of individual students from the tutors through verbal or written comments. Observations, interviews or sometimes questionnaires provide information about the perception of health personnel, administrators of health institutions, patients and their relatives, and community member about the performance and attitudes of students.

Peer evaluation is used in the assessment of students in group work, when the product of the group is scored by the instructor and the students are asked to divide that mark among themselves according to the contribution made by each student. Also during the presentation of the group's work the students are asked to score each other.
The course coordinator analyses and summarizes the results and presents them together with the end of course examination to the Faculty Board for discussion, recommendations and decisions to introduce changes and modifications in the curriculum. The whole undergraduate curriculum is regularly reviewed in workshops, where the end of course evaluation results are seriously considered.

References

Hamad, B. (1982). Interdisciplinary field training research and rural development. *Medical Education, 16*, 105-107.

Koroum, H.O. (1972). Observations on maternal mortality in the Sudan. *Sudan Medical Journal, 10*, 102-107.

Mirghani, O.A., El Amin, E.O., Ali, M.E.S., Osman, H.S., & Hamad, B. (1988). A combined course of primary health care practice and family medicine. *Medical Education, 22*, 761-763.

Population Reference Bureau. (1985). *World population data sheet.* Washington, DC: Population Reference Bureau.

Rahim, I.M. (1989). Six strategies for effective and relevant medical education as adopted in Gezira Medical School. *Saudi Medical Journal, 10* (5), 391-395.

Saeed, A.A.W. (1984). Rural residence course in the Faculty of Medicine, University of Gezira, Sudan. *Sudan Medical Journal, 20,* 39-52.

Annals of Community-Oriented Education
1993, Vol. 6, 173-179

Education and Training in the Early Postgraduate Years: The N.S.W Experience

Kath Schofield and Nicholas A. Saunders
Postgraduate Medical Council of New South Wales
Sydney, Australia

Abstract

The Postgraduate Medical Council of New South Wales (NSW) was established in November 1988 to address a number of issues related to the education, training and recruitment of Junior Medical Officers (JMOs) in the NSW public hospital system. The Council was formed in response to a variety of pressures such as increasing industrial unrest by the JMOs, increased attrition due to apparent dissatisfaction with the training provided and the workload in public hospitals, and concern regarding an impending shortage of JMOs due to changes in the number of graduates from the three NSW medical schools.

The first two postgraduate years had long represented an ill defined period in terms of purpose and content of training. There appeared to be a lack of responsibility for the education programme for JMOs. The Universities had discharged their responsibilities, the Learned Colleges, responsible for specialty diplomas, had little involvement until the third postgraduate year. Also, as the JMOs were mobile, they tended not to engender a pastoral concern from the senior hospital staff.

In the past four years, the Council has, with the assistance of the NSW Medical Board, the NSW Department of Health and the hospitals, established part-time Directors of Clinical Training (DCTs) at every public hospital in NSW which employs JMOs. Through the DCTs, the Council has produced significant change in the education and training of junior doctors. Standards have been set, surveyors trained, and two rounds of accreditation of hospitals surveys have been completed.
The Council is confident that all doctors in their first two postgraduate years now have the opportunity to gain a balanced education, with good bedside teaching and appropriate levels of supervision.

Introduction

There are approximately 900 junior medical officers (JMOs) in their first two postgraduate years, working in the public hospital system of New South Wales (NSW). In 1987 two separate reports, commissioned by the NSW Department of Health, had identified poor

---

Requests for reprints should be sent to K. Schofield, Postgraduate Medical Council, P.O. Box 109, North Ryde, N.S.W. 2113, Australia.

training, inadequate supervision, and limited emphasis on education, marked by variable experiences as significant concerns for JMOs. This contributed to poor retention and mid-year attrition of junior doctors, dissatisfaction with the public hospital system and the apparent inadequate preparation of doctors for subsequent independent, unsupervised practice. While senior clinicians were not neglecting their teaching, a proportion of them focused their efforts on registrars in specialist training programmes and assumed that a "trickle down effect" would occur for the education and supervision of junior doctors. A process of accreditation of hospitals wishing to employ interns had been developed between the NSW Medical (registration) Board and the NSW Department of Health, and preliminary surveys at hospitals had already been undertaken. These surveys identified major deficiencies in the clinicians' awareness of the educational needs of the JMOs. It became apparent that an organisation was required with strong clinical and university representation which could influence the attitudes of specialist medical staff towards JMO training at the bedside. This body would also require finance necessary to support their role and a power base to ensure the implementation of their standards.

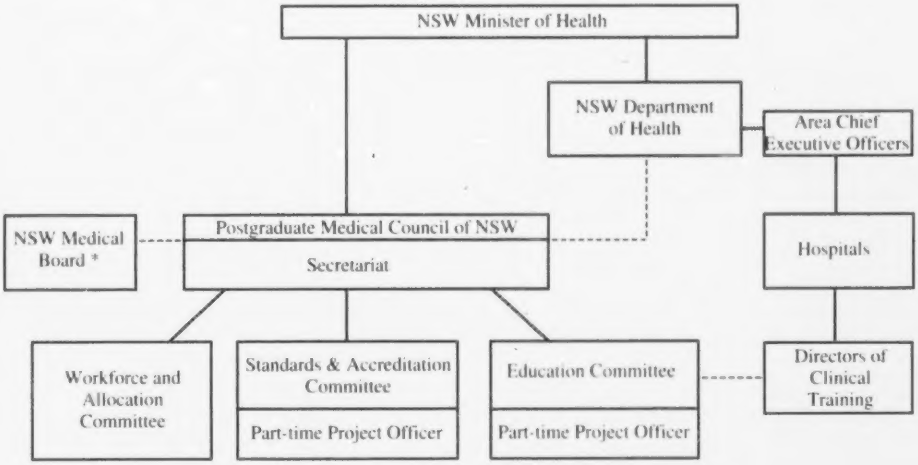
In November 1988 the Postgraduate Medical Council of NSW was born. Its membership reflected a wide range of interested groups whose co-operation would be necessary, in order to effect educational change at a clinical level. The terms of reference were divided into three areas: Education, Standards and Accreditation, and Workforce and Allocation. While the Council's *raison d'être* was to be the education and training of JMOs, the power of allocating JMOs was to be the instrument with which the Council could safeguard its standards. The high level of government commitment was reflected in realistic funding. The Council was given a budget of $ 1,000,000 recurrent annual funding to establish a secretariat, provide financial support to approximately fifty hospitals for the employment of a part-time Director of Clinical Training (DCT), establish and manage an accreditation programme, and **have sufficient funds available to encourage and support innovative projects and research which would enhance the education and training of JMOs**.

Four years later, the Council is well established. It is widely accepted that the Council is an effective organisation which has produced significant changes in the education and training of junior doctors. The Council has been successful in putting the education and supervision of JMOs high on the agenda of the public hospital system in NSW. While it is difficult to evaluate the effectiveness, there are a number of parameters which serve to indicate a positive outcome.

During the last four years two rounds of accreditation surveys of hospitals throughout the state have been completed. During these surveys a significant proportion of junior medical staff, senior clinicians and medical administrators were interviewed. From the accreditation reports it is apparent that there is an increased awareness of the need for supervision and training of junior medical staff, by both senior clinicians and medical administrators. JMOs have also reported that their interests were better catered for through formal education programmes and an increased emphasis on bedside teaching. There has been an improved equity in JMO staffing and greater training opportunities provided for JMOs. There has also been increased retention of JMOs in the NSW public hospital system and decreased JMO industrial disputation. These achievements in a relatively short period can best be discussed in relation to structure and process.

Structure

The Council is composed of nominees of the medical schools of the Universities of Newcastle, New South Wales and Sydney, the NSW Medical Board, the Royal Australasian College of Physicians, the Royal Australasian College of Surgeons, the Royal Australian College of General Practitioners, the NSW Department of Health, the Australian Medical Association, Resident Medical Staff (nominated by the Public Service Association), and hospitals including teaching hospitals, as well as metropolitan district and rural hospitals. The Council advises the NSW Minister of Health directly and has important functional relationships with the NSW Department of Health which funds the Council and the NSW Medical Board which is legally responsible for the pre-registration (internship) year (Fig. 1).


NSW Minister of Health
NSW Department of Health
Area Chief Executive Officers
NSW Medical Board *
Postgraduate Medical Council of NSW
Secretariat
Hospitals
Workforce and Allocation Committee
Standards & Accreditation Committee
Part-time Project Officer
Education Committee
Part-time Project Officer
Directors of Clinical Training

* The Medical Board is the licensing authority

Figure 1. Organisational chart

The Council's terms of reference are shown in Figure 2. A significant feature of these terms of reference is that the Council has responsibility for education as well as for allocation of the workforce. While this dual responsibility has occasionally led to some healthy conflict between the Council's educational and workforce committees, it has also ensured that the Council's standards, initiatives and programmes remain relevant and feasible. Another important feature of the terms of reference is that they clearly focus on the first two postgraduate years and do not overlap with the operational areas of other organisations, i.e. the universities or the learned colleges. The Council and its committees are supported by a small secretariat: a full time executive director, a secretary and two part-time project officers. As the Council's activities are largely in the hospital setting, so too is the majority of their funding concentrated in the hospitals. Each hospital in NSW which employs JMOs is required to have a part-time director of clinical training (DCT), usually a senior clinician within that hospital. These directors oversee and coordinate the training and education of the JMOs. In addition, they act as an advocate for the JMOs in dealings with the hospital administrative staff. They also facilitate feedback on the JMOs' performance. While the directors are appointed by their hospital and have line responsibility to their hospital, the Council funds their position (through the Department of Health) and provides them with policy guidelines.

Since a major function of the DCTs is to be agents of change within their own organisation, the Council has endeavoured to develop their skills, so that they may then teach others. A two day workshop is convened twice in each year to improve the directors' skills in surveying for accreditation, critical appraisal of bio-medical literature, rational use of investigations, appraisal and evaluation of performance, clinical teaching and communication skills. These workshops are also used for the dissemination of information to the directors on current issues and to elicit feedback to the Council on any issues or problems that may relate to the Council's programmes. In addition these meetings help to establish formal and informal support networks and they promote a sense of common purpose among the DCTs.

Process

The Council has sought from the outset to develop fair, reasonable and achievable guidelines for internships and general medical residencies. In developing its policy the Council has consulted widely and ensured broad participation in its activities. While the Council has the formal power and authority to enforce change through the mechanisms of accreditation and allocation of the workforce, it has preferred to effect change through providing support and encouragement to the hospitals. The underlying philosophy has been consistent with that of Al Capone: "*You can get much farther with a kind word and a gun than you can with a kind word alone.*".

Education Committee

1. Oversee and coordinate the training and education of doctors in the early post-graduate years, focusing particularly on the first two years and thereafter on those doctors not in specialised vocational training.
2. Ensure that educational programmes are developed in all network hospitals to prepare medical officers in the first two post-graduate years for unsupervised independent medical practice.
3. Ensure clinician involvement in the education and assessment of junior medical practice.
4. Develop resources and guidelines to be used by clinical supervisors.
5. Develop mechanisms for vocational training.

Standards and Accreditation Committee

1. Develop guidelines for the accreditation of the teaching, training, experience and organisation provided by hospitals for Junior Medical Staff.
2. Establish and supervise a surveying system to accredit hospitals for suitability of training and supervision of Junior Medical Staff.
3. Revise the composition of the Allocation and Secondment Networks for Junior Medical Staff as required on the basis of the resident training accreditation process.

Workforce and Allocation Committee

1. Monitor the Junior Medical Staff workforce in conjunction with the Department of Health and make recommendations on policies dealing with workforce issues.
2. Coordinate the allocation of interns and first year residents to the NSW network of participating public hospitals.
3. Liaise with the Education and Accreditation Committees to ensure that intern and resident placements are appropriate in terms of supervision and training.

Figure 2. Terms of reference of the post-graduate council

The Council aims for evolution rather than revolution. While it has avoided a breakneck pace, it has ensured that the pace is adequate for everyone to see that change is occurring.

Standards and Accreditation Committee

This Committee has had the important task of developing an accreditation programme that is equitable yet has teeth. The accreditation standards relate to broad areas of administration and organisation, the general clinical training programme for JMOs, the supervision offered, method of assessment of junior medical officers and opportunity for career counselling, settling of grievances and processes of evaluation of their experience by JMOs.

The survey teams are broadly based. Each hospital survey team includes at least one medical administrator, one clinician (frequently a DCT from another institution) and one JMO. For larger centres, the survey team is sometimes increased to four or five, or the duration of the survey is increased. Initially it was suggested that an elite corps of surveyors be established. It was decided not to choose that path, as the use of a single team for fifty hospitals would have materially delayed the process. There was also great value in involving as many people as possible in the whole process, although this might increase undesirable variability in surveying and reporting. In retrospect this was the correct decision, as there is now a pool of some 130 trained and committed surveyors who have put the issue of intern and resident education high on their personal agenda and who take that commitment back into their day to day role at the hospital.

The accreditation process pays particular attention to interviewing as many interns, residents, registrars and senior clinicians as possible. In this way the Council is kept well informed of the views and morale of the JMOs in the public hospital system. Failure to meet the agreed standards of the Council has its consequences: six months provisional accreditation or one year accreditation, rather than three years for those hospitals that substantially comply with the standards. There is an appeal mechanism, but failure to remedy problems that were identified during the accreditation visit will result in the withdrawal of intern and resident placements, and the NSW Medical Board will withdraw recognition of the institution for junior doctors in their pre-registration year.

Education Committee

A great deal of time has been spent on developing education guidelines for the early postgraduate years and on developing a network of committed clinicians to ensure that education and training programmes are implemented. The Council insists that the first two post-graduation years should be broadly based and that the internship must include a term[1] in medicine, surgery, and accident and emergency medicine respectively. The educational guidelines are sufficiently flexible to take into account the varying size and role of the hospitals.

---

[1] Terms in NSW are of 10 to 13 weeks duration

The Council has sought to expand the skills of the DCTs and to provide financial and other support, in order to facilitate the introduction of good education programmes. Over the last four years the Council has spent approximately $ 250,000 on funding innovative programmes to improve the education and training of JMOs. Some projects have included the development of training aids, some have looked at improved models of education and delivery of care, etc. The majority of projects have been undertaken in the hospitals. More recently two educational videotapes on time management for JMOs and issues surrounding the management of HIV/AIDS patients have been produced. The Council intends to continue to commit substantial sums of money to such projects.

Workforce and Allocation Committee

As noted earlier, one of the reasons for the formation of the Council was to deal with an anticipated "staffing crisis" expected to be caused by the shortfall of JMOs during the 1990s, due to the increased length of the medical courses at the Universities of Sydney and New South Wales. With the assistance and cooperation of the Australian Medical Association, the Public Service Association and the NSW Department of Health, alternative sources of junior doctors were secured. An occupational analysis of JMO work practices was also conducted, in part to identify any tasks being undertaken by junior medical staff that could be streamlined or transferred to other occupational groups. The Committee was pleased to find that interns and residents were spending most of their time on tasks that were considered important and relevant. Nevertheless, this analysis stimulated discussion and consideration of restructuring the junior medical workforce in NSW public hospitals.

This Committee has sought to ensure equity in the allocation of JMOs and it liaises closely with the Education and the Standards and Accreditation Committees to ensure that allocation of junior doctors reflects a hospital's ability to provide adequate supervision and training.

Conclusion

While the Council has been successful in encouraging changes in attitudes and practices in so many hospitals, there is a need for constant review of standards and programmes, so that they remain relevant. As the delivery of patient care changes, particularly with increasing emphasis on same day surgery and ambulatory care, so too will programmes for junior doctors change, in order to take advantage of new educational opportunities.

The Council has been gratified by the support and commitment shown by the profession. While the Council can claim credit for coordinating and encouraging the changes, the real credit lies with the directors of clinical training, the medical administrators and the accreditation surveyors who have worked so tirelessly for reform.

Annals of Community-Oriented Education
1993, Vol. 6, 181-190

Multiprofessional Education at the Postgraduate Medical School, University of Exeter, United Kingdom

Denis Pereira Gray, Rita Goble, Sheila Openshaw, Keith Bolden, Michael Hall, Antony Lewis, Robert Jones, Julian Scott, Ann Hall, Margaret Damant and Lyn Hunter
University of Exeter
Exeter, United Kingdom

Abstract

The Department of General Practice in the Postgraduate Medical School of the University of Exeter has been developing a multiprofessional approach to continuing education for doctors and health professionals since 1973. Since then appointments to the staff have been made in dentistry, general practice, nursing, occupational therapy, physiotherapy, practice nursing, and speech therapy. Health professionals from these professions as well as from chiropody, dietetics, health visiting, National Health Service (NHS) management, physiotherapy and speech therapy, have attended courses organised through the continuing education scheme in the Department. The first British multiprofessional master's course in health care was offered by the University of Exeter through this Department in 1986. The paper describes the range of education, the university approved courses, and the research students and publications in and from this Department. It draws some conclusions from this experience in multiprofessional learning.

Introduction

The Department of General Practice was established in December 1973 within the Postgraduate Medical School (then Institute) of the University of Exeter, through the appointment of a single, part-time medical Senior Lecturer in-charge. Three other part-time medical senior lecturers were appointed eleven months later.

The set of eight aims for the Department (Department of General Practice, 1978), developed at the time when the World Health Organization was developing its Alma Ata Declaration (WHO & UNICEF, 1977), includes:

"To develop interdisciplinary work among the professions allied to medicine."

Historical Development

1973

Social work. The initial responsibility of the new academic department of general practice was to establish vocational training for general practice. However, it inherited through its

---

The authors represent the following professions, in the order of listing: general practice, occupational therapy, nursing, general practice (four), general dentistry, nursing (two), occupational therapy.

Requests for reprints should be sent to D. Pereira Gray, University of Exeter, Postgraduate Medical School, Exeter EX2 5DW, United Kingdom.

Head of Department (DJPG) an annual course in social medicine for undergraduates of the University of Exeter reading for the B Phil in social work. This consisted of ten, 1 hour-long seminars held in the Department of Sociology each year, also attended in some years by those studying for a certificate in social work. These seminars were established in the late 1960s and constituted the first social medicine course in a British university taught by a general medical practitioner.

1974

Vocational training for general practice was introduced for the first time in Exeter by one of us (DJPG) in April 1974. It comprised a selection of hospital posts and university selected training practices with a half day release course throughout the three years held in the Department. Assessment was to include the MRCGP[1] examination. An Occasional Paper and the first three books on this subject both came from the Department (Pereira Gray, 1977; Pereira Gray, 1982; Hall, 1983; Bolden et al., 1990).

Interactive small group work is defined as a teaching/learning technique in which the behaviour of the group, as well as the individuals in it, are used explicitly to promote learning. This was introduced in 1974 following the experience of one of us (DJPG) on the first of the Royal College of General Practitioners' Nuffield courses (Anon.,1975; Freeling et al., 1982). The advantages of such a way of learning and teaching were later described by Pereira Gray and Bolden (1985).

1975

Multi-disciplinary course of lectures in medicine. From the annual seminars came a request for more specific teaching for social work students and social workers on the common chronic illnesses which affect their clients. It was agreed that the Department of General Practice would offer a course on such conditions. Chronic conditions included stroke, multiple sclerosis, and epilepsy, and another of us (MSH) took on the responsibility for a course offered to social service departments with an average attendance of about 40. The courses were financially self-supporting.

Simultaneously, requests for education on medical and allied subjects came from a number of health professions, notably from physiotherapists, occupational therapists and social workers. One of us (REAG), at that time Chairman of the local Regional Occupational Therapy Committee, asked the Department to organise a series of lectures. By 1976, the Department of General Practice was looking for a co-organiser from the social work or the allied health professions, and MSH and REAG took on the organisation of these courses and at the same time started to prepare a major grant application to the King Edward's Fund, London.

---

[1] Membership of the Royal College of General Practitioners.

1977

In 1977, the Department hosted a study day for the professions allied to medicine which was attended by 70 therapists and officials from both the Government ministerial Department of Education and Science and the Department of Health.

Community Liaison Group. The Department of General Practice identified both the need for interprofessional learning and the need for some organisation to promote and co-cordinate it. One of us (RVHJ) set up a Community Training Liaison Group to bring the educational organisers together, so that, as a first step, the professions could meet and work together. The five members of this group consisted of those responsible for the postgraduate training of community nurses, health visitors, the professions allied to medicine, social workers, and trainee general practitioners. It is thought that this was the first such development in the United Kingdom.

The objectives (Hall, 1981) were agreed as:

1. To increase understanding among those responsible for community health care training in the tasks and problems of comparable professions.
2. To explore the possibilites of cooperation in training programmes.
3. To explore the possibility of pooling resources, both of finance and equipment, for their most effective use.
4. To assess the benefits (or otherwise) which arise from cooperation.

The work and progress of this development were published by Jones (1986).

1978

Teamwork identified as a major issuse. The first book on practice organisation in general practice was written by the four senior lecturers in the Department in 1976 (Jones et al., 1978), with further editions in 1981 and 1985. This included a section on "the people" and a chapter on "Working together - teamwork". It thus identified this subject as a major issue in primary care.

1979

In July 1979, a national conference was held at the University of Nottingham. The aim was "to consider educational principles relating to the methods of interprofessional collaboration currently in use, and to share aspects of the curriculum and content with a view to improving standards of practice and developing new thinking" (Kuenssberg, 1981). One of us (MSH) contributed on that occasion (England, 1981).

Three-profession Continuing Education for Therapists. The Department's grant application for over £100,000 was approved by the King's Fund, London. It sought to offer a new form of continuing education for the professions allied to medicine (occupational therapy, physiotherapy, and speech therapy).

The course, which came to be known as the continuing education scheme, lasted for one academic year. It was offered weekly in university term time with strong emphasis on

research methodology, critical thinking, and project work. Awareness of new developments was fostered, as well as sensitivity of each profession to the other professions involved in patient care.
Tutorships in all three professions and general practice were funded and advertised. The selection committee included representatives of the national professional bodies in occupational therapy, physiotherapy, and speech therapy. Well qualified staff with a second degree or further professional qualification were appointed.

The grant made it possible to fund one of us (REAG) as the first non-medical staff member in the Department as Research Fellow from January 1980. This project was the first fruit of multiprofessional development and made it possible to transfer some of the newly won knowledge about developing education for doctors in the community to three other health professions.

This course has been continued and has attracted applicants from: chiropody, dietetics, nursing, occupational therapy, physiotherapy, pharmacy, and speech therapy (Goble et al., 1983).

An early course attender, an occupational therapist employed by the local social services department, became a postgraduate student studying the evaluation of the course. She completed her PhD in 1992, entitled "Continuing Education: The professional development of therapists". She thus became the first "home grown" Ph D from the Department. Her evaluation showed substantial benefits of these courses in terms of career development and problem-solving skills.

1981

In 1981, an independent Society was formed, the South West Society for Research and Rehabilitation. It was formed by students from the Department to maintain their interest and skills and it continues to flourish.

1984

A multiprofessional advanced clinical trainers course was held in 1984 organised by one of us (REAG). It lasted four separate weeks and attracted therapists from the North of England and the Republic of Ireland. In the same year REAG was awarded a travelling fellowship (Alan Brooking) to study multiprofessional continuing education in the USA.

1987

General dental practice. General dental practitioners in the United Kingdom, like their general medical practice colleagues, are independent, self-employed professionals offering primary care in local communities and also often work in small groups. Patients in the British National Health Service (NHS) have a free choice of dentist and usually stay with the same one for many years, thus building up long-standing professional-patient relationships. Dentists have traditionally been considered together with doctors in the NHS (NHS Management Executive, 1991). A multiprofessional educational unit committed to education for the professions in primary care was needed to help dentists as well as doctors.

On 1 February 1987, the link was established when one of us (JS), the then newly appointed Regional Adviser in General Dental Practice at the University of Bristol, was appointed as an Honorary Research Fellow in the Exeter Department of General Practice. Vocational training for dentists was started for the first time in the South Western region in the same building as for medical trainees. Dental organisers, tutors, trainers and trainees started to come to the annual Departent dinner and other social occasions.

Practice Nursing. As general medical practice moved from an essentially single-handed professional activity in the 1940s towards a multiprofessional team, the practice nurse emerged as the first fellow professional in that team. Despite tensions in the doctor-nurse relationship at national level and in hospitals, the arrangements in general practices led to very good working relationships.

The role of the practice nurse has developed steadily, but the educational support lagged far behind the arrangements for their medical colleagues in primary care, unlike the educational facilities for their other nursing colleagues in the primary health care team such as district nurses and health visitors, as well as for other health professionals. Clearly a systematic approach was needed. One of the first steps in developing a subject is to define the field, and in 1984 one of us (KJB) jointly with a practice nurse wrote the first book on practice nursing (Bolden et al., 1984) which went into a second edition in 1989.
The next step was to recruit a staff member, and the first Practice Nurse Facilitator was appointed to the staff in November 1986. Jointly with one of the senior lecturers (KJB), she was one of the first practice nurses to achieve a publication in the *British Medical Journal* (Bolden et al., 1986). This was a second example of how the Department's experience in developing new forms of education for general practitioners was being applied to another profession.

The Department offered a series of study days for practice nurses. These led to calls for a formal induction course for new practice nurses and later for a more advanced updating course for those already in post.

An application was prepared (REAG), and in 1987 the Department was recognised by the English National Board for Nursing (ENB) as an approved training centre for practice nurse training. This was particularly pleasing as most centres at that time were approved in polytechnics, and the Exeter Department was the only university approved in the South Western region of the United Kingdom. It was one of the very few university departments in the country to be so approved.

In 1989 two of us (KJB & APL) offered the first multiprofesssional combined general practitioner trainer and practice nurse course. This was attended by 24 general practitioners and 12 practice nurses (Bolden et al., 1990).

Practice nurses called consistently for more university recognition for their educational work in the Department, and a submission for a validated course, prepared by four of us (REAG, SO, MD, AH) was eventually approved by the University of Exeter.

The new University of Exeter certificate course in health care consisted of 30 days spread over an academic year. This was to have a series of profession-specific options, the first of which was practice nursing. The first section of the course integrated the nurses with occupational therapists and other health professionals and was therefore multiprofessional. The later part was organised for the nurses on their own.

This certificate course started in October 1991 with 19 practice nurses; all gained the certificate and one with distinction. Some of these practice nurses have gone on to register for masters' degrees. A second book will analyse the role and relationships of practice nurses in terms of their professional development (Damant et al., 1993).

1986

Taught masters' courses. By the mid 1980s, the Department was sensing that the direction for the future would lie in a ladder of courses with university recognition backed by a move into modularisation. Two of us (DJPG and REAG) prepared a submission for a six module, two year part-time course. This was to be multiprofessional in terms of both staff and students. The course commenced in October 1986, the first multidisiplinary MSc in the country with three therapists, two general practitioners, one health visitor, one district manager of a health service authority, a general practice manager, and a practice nurse among its students. The tutorial team included four of us (DJPG, KJB, MSH and REAG) i.e. three senior academic staff from general practice, one Senior Lecturer in Rehabilitation (an occupational therapist) and another research fellow who was qualified as a nurse and as an occupational therapist. One of the students reported on the course (Richards, 1987), and the same student went on to complete a study of the care of doctors as patients for his course dissertation. This was subsequently published (Richards, 1989).

Demand grew, even though these students were required to pay their own fees and other costs. Prolonged study leave under the NHS was not available for the general practitioners. The other professionals often had problems in getting permission to attend and in obtaining any help with fees.

By 1987, it was clear that the logic for the Department was to extend entry, which until then had been limited to only one entry every two years. Permission was sought by one of us (REAG) to offer a variant, i.e. a second MSc in professional education which would share most but not quite all the modules. This was approved by the University, so that a second entry was possible in October 1988, thus making it possible for the Department to offer one entry each autumn.

Thus the present position has been reached (1993), both versions of the MSc are operational with two of us as Course Directors (REAG and APL). At present 21 students are registered on the MSc in Health Care and 16 on the MSc Professional Education, a total of 37 postgraduate students. Two of us (APL & SO) are actively working on converting the two courses towards a single organisational framework with a set of core modules and a wider set of optional modules.

Professional Development

Personality and learning. An active university department needs to research new ways of working and learning. Two educational developments have been especially studied in this Department: the interactive small group mentioned above and the relationship of personality to adult learning; both are relevant to all health professions.

The personality research has used the learning styles questionnaire (LSQ) (Honey et al., 1986) and the Firo B. Two of us (APL and KJB) have reported on the use of the LSQ in courses in the Department (Lewis et al., 1989; Bolden, 1991). One finding was that adults may have preferred styles of learning which do not match the preferred styles of their teachers. If this is confirmed, it might explain some of the problems in continuing education among the health professions, and blocks to learning on many courses could be avoided by offering education in the professionals' own preferred learning style.

University research degrees. It was Sir William Osler who noted that the presence of postgraduates was an indication of the quality of an academic unit. He recognised that postgraduates seek out and move to units where there is intellectual excitement, energy, and challenge.

It was not until the taught masters' course was safely designed and delivered in 1986 that the Department felt strong enough to extend its strategy towards systematically encouraging postgraduates to register with the University of Exeter through the Department for pure research degrees. The first registrations were accepted in 1988.

A series of obstacles were encountered, because the National Health Service had not set in place support systems for research in primary care as it had for secondary care. The dissonance between need and available facilities for research in occupational therapy has been emphasized (Goble, 1989; Goble, 1991). The conclusions for general practice have also been published (Pereira Gray, 1991).

Although the needs of primary care are great, the resources are minimal. Progress has, therefore, been slow, if only because funded time for research is so hard to obtain. However, by December 1992 six general practitioners, one general practitioner trainee and twelve from the professions allied to medicine were registered for the research degree. We believe it includes the biggest cohort of occupational therapists for a research degree in Britain. The first dentist also registered with the Department of General Practice in 1992 for a higher degree by research.

The first successful research thesis came from a physiotherapist (Walker, 1991) who had been one of the physiotherapy tutors for the continuing education course. This illustrates how postgraduate courses can spawn good research degrees. She wrote an interesting M Phil thesis which compared the outcomes of care provided by physiotherapists in general practice with those working in hospital departments.

The second thesis was a Ph D (Ashton, 1992) which gave the Department the unique distinction of having had the first three occupational therapists in Britain with a Ph D in the Department; the first two as staff and the third as the first Ph D student to graduate.

Multiprofessional staff. The early history of the Department of General Practice was essentially the history of teaching in the Department.
The Department was originally funded by the Department of Health to develop vocational training for general practice. This was thus its main pre-occupation in its early years. However, as the first postgraduate department of general practice in the British Isles, it felt it had a duty to analyse its discipline deeply and to contribute to its development.

From the first, the Head of the Department (DJPG) placed great emphasis on writing and publishing the results of endeavours, first as a quality check (was the work good enough?) and secondly to share it widely with colleagues. The early publications from the Department were entirely from doctors, as there were no other staff. Like the first book from the Department (Jones et al., 1978) they tended to spring from the identification of the needs of trainees on the vocational training course. It was not until colleagues from other professions joined the staff, starting in 1980, that multiprofessional publications were achieved.

During the 1980s, the Department implemented its stated aim of fostering interprofessional learning by making a series of appointments to the staff from outside the medical profession. These appointments have been governed by the people available, the funds available (all have had to be financially self-supporting) and the university degrees and professional qualifications held.

By the end of 1992 two of the six academic staff (one senior lecturer and one lecturer) were non-medical. In addition course organisers in dentistry, practice nursing, continuing education for the professions allied to medicine and a nurse tutor (who completed a

research degree at another institution) were employed part time. An educational focus has continued, and recent publications show some improvements (Jones, 1992).
The later history of the Department has been increasingly about research, also on a multidisciplinary basis.

Summary

Over 19 years, a postgraduate university department of general practice first adopted a policy of multiprofessional learning. Gradually it broadened its approach, so that by the end of 1992 educational activities were offered for dentists, general practitioners, occupational therapists, physiotherapists, practice nurses, and speech therapists. All of these have been, or currently are represented on the staff.

A ladder of courses has been constructed ranging from study days, and week-long courses, to a one year university certificate course in health care. Above these stand two two-year part-time taught masters' courses, and health professionals can register for research theses by M Phil or Ph D. By the end of 1992 a total of 58 individuals were registered for postgraduate degrees with the University through this Department (Pereira Gray, 1992).

References

Anon. (1975). The Nuffield experiment. *Journal of the Royal College of General Practitioners, 25*, 547-549.

Ashton, G. (1992). *Continuing education: The professional development of therapists.* Ph D thesis. Exeter, United Kingdom: University of Exeter.

Bolden, K.J. (1991). Personality, the profession and change. Connolly Oration to the Royal Australian College of General Practitioners. *Australian Family Physician, 20*, (5), 607-612.

Bolden, K.J., & Bolden, S. (1986). The practice nurse: Is history repeating itself? *British Medical Journal, 293*, 19-20.

Bolden, K.J., & Lewis, A.P. (1990). A joint course for general practitioners and practice nurses. *British Journal of General Practice, 40*, 386-387.

Bolden, K.J., Steele, R.J.F., Leete, R.J., & Dwyer, D.M.P. (1990). *Running a course.* London, United Kingdom: Radcliffe.

Bolden, K.J., & Tackle, B.A. (1984). *Practice nurse handbook.* (Second edition 1989). London, United Kingdom: Blackwell Scientific Publications.

Damant, M., Martin, C., & Openshaw, S. (1993). *Practice nursing.* (In press).

Department of General Practice. (1978/79). *Prospectus.* Exeter, United Kingdom: University of Exeter.

England, H. (Ed.). (1981). *Education for co-operation in health and social work. Occasional paper 14.* London, United Kingdom: Royal College of General Practitioners.

Freeling, P., & Barry, S. (1982). *In-service training: A study of the Nuffield Courses of the Royal College of General Practitioners.* Windsor, United Kingdom: NFER Nelson.

Goble, R.E.A. (1989). Research in occupational therapy: Luxury or necessity? *British*

Journal of Occuaptional Therapy, 9, 349.

Goble, R.E.A. (1991). Keeping alive intellectually. *Journal of Nursing, 4,* (33), 19-22.

Goble, R.E.A. et al. (1983). *Continuing education: Developments in interprofessional learning. A selection of rehabilitation papers.* London, United Kingdom: King's Fund.

Hall, M. (1981). An account of two in-service courses. In: H. England (Ed.). *Education for cooperation in health and social work. Occasional paper 14.* London, United Kingdom: Royal College of General Practitioners.

Hall, M.S. (1983). *A GP training handbook.* Second edition 1989. London, United Kingdom: Blackwell.

Honey, P., & Mumford, A. (1986). *Manual of learning styles.* Maidenhead, United Kingdom: Honey.

Jones, R.V.H. (1986). *Working together-learning together. Occasional paper 33.* London, United Kingdom: Royal College of General Practitioners.

Jones, R.V.H. (1992). Getting better: Education and the primary health care team. *British Medical Journal, 305,* 506-508.

Jones, R.V.H., Bolden, K.J., Pereira Gray, D.J., & Hall, M.S. (1978). *Running a practice.* Third edition 1984. London, United Kingdom: Croom Helm.

Kuenssberg, E.V. (1981). Introduction. In: H. England (Ed.). *Education for co-operation in health and social work. Occasional paper 14.* London, United Kingdom: Royal College of General Practitioners.

Lewis, A.P., & Bolden, K.J. (1989). General practitioners and their learning styles. *Journal of the Royal College of General Practitioners, 39,* 187-189.

NHS Management Executive. (1991). *Working for patients. Postgraduate and continuing medical and dental education.* London, United Kingdom: Department of Health.

Pereira Gray, D.J. (1977). *A system of training for general practice. Occasional paper 4:* London, United Kingdom: Royal College of General Practitioners.

Pereira Gray, D.J. (1982). *Training for general practice.* Plymouth, United Kingdom: Macdonald & Evans.

Pereira Gray, D. (1991). Research in general practice: Law of inverse opportunity. *British Medical Journal, 302,* 1380-1382.

Pereira Gray, D. (1992). *Interprofessional learning: The Exeter experience.* Paper presented at CAIPE Cumberland Lodge meeting.

Pereira Gray, D.J., & Bolden, K.J. (1985). Learning in small groups. In: D. Pereira Gray, & J. Pereira Gray, (Eds.). *Medical annual 1985.* Bristol, United Kingdom: John Wright.

Richards, C. (1987). Personal view. *British Medical Journal, 295,* 849.

Richards, C. (1989). *The health of doctors.* Project Paper No 78. London, United Kingdom: King's Fund.

Walker, A. (1991). *Physiotherapy in primary care.* M Phil thesis. Exeter, United Kingdom: University of Exeter.

World Health Organization & United Nations' Children's Fund (1977). *The Alma Ata Declaration.* Geneva, Switzerland: WHO & UNICEF.

Annals of Community-Oriented Education
1993, Vol. 6, 191-196

POLICY AND LEADERSHIP

Leadership by Foundations

In the section "Innovation and Change" in Volume 5 (1992) we included a paper by Dr. Angela Towle: "Changing Medical Education in the United Kingdom: The Role of a Non-Governmental Organisation". This was the King Edward VII Fund of London, United Kingdom.

In this Volume we are able to include two papers by Dr. Ronald Richards that illustrate the influence of the W.K. Kellogg Foundation in the United States of America and beyond. That this significant leadership for change in medical education is shared by other major foundations in the U.S.A. is illustrated by the extracts, reproduced below, from a recent Robert Wood Johnson Foundation report. The Foundation awards more than US $ 170 million each year in grant initiatives. These include "Preparing Physicians for the "uture: A Programme in Medical Education", "Generalist Physician Faculty Scholars Programme", and "Practice Sights - State Primary Care Development Strategies".

The Editor

Medical Education in Transition*
Commission on Medical Education: The Sciences of Medical Practice

Robert Q. Marston and Roseann M. Jones (Editors)
The Robert Wood Johnson Foundation
Princeton, NJ, United States of America

Preface

Steven A. Schroeder, MD

The purpose of a commission is to bring attention to issues that need review and new direction. The Robert Wood Johnson Foundation Commission on Medical Education: The Sciences of Medical Practice has done this. The Commission's report states clearly the reasons for reviewing science education in medical schools and makes specific recommendations for improvement. The practice of medicine today requires not just a mastery of basic science but also an understanding of the principles of science essential for the lifelong practice of medicine. To whatever extent this report improves medical education with regard to accomplishing this task, it will have been successful.

This volume includes the report and the background papers that together capture the spirit and breadth of the Commission's query on the relationship between science and medical practice. They make a compelling argument that the recent, rapid advances in molecular and cellular biology have yielded a new basic science that in itself requires medical schools to look carefully at how they teach science. I agree with the inclusion by the Commission of the behavioural, epidemiological, and probabilistic sciences as an integral part of the basic science of medicine. Physicians in practice do require a thorough understanding of these disciplines. The beneficiaries of this report will be medical students - who will experience, as they have not previously, the joys of studying science and its application to medical practice - and ultimately, the public these young physicians serve.

---

* These extracts have been reproduced with the generous permission of S. Schroeder, MD, the President of The Robert Wood Johnson Foundation, Princeton, New Jersey, United States of America.

Each of the Commission's recommendations has been presented elsewhere and earlier. What makes this report different? Its timing is crucial. Many medical schools are now recognising shortcomings in medical education and are ready to undertake the changes necessary to improve the educational process. Recognizing this opportunity for a change in medical education - what is taught; how it is taught; where it is taught; the value of teaching - The Robert Wood Johnson Foundation also is sponsoring Preparing Physicians for the Future: A Program in Medical Education. Eight medical schools have been selected for grants under this Program and are already adopting many of the recommendations of the Commission. The interaction between the schools and the Commission during the preparation of the report has given it a sense of everyday reality uncommon to most commissions' efforts.

I believe the report's title, *Medical Education in Transition*, is apt. Medical education has been slow to adjust to new science and to recognise that the environment of medical practice has in recent years changed markedly and that it will continue to change even more rapidly. This report recognises these facts. It focuses on what some of these changes in science education in medical schools should be. Medical schools, once they undertake a review of how they teach science, will inevitably be challenged, however, to do a thorough review of the entire content of medical education. This may be an unexpected, but most important, realisation of The Robert Wood Johnson Foundation Commission on Medical Education: The Sciences of Medical Practice.

I congratulate the members of the Commission for their splendid effort and particularly wish to acknowledge the able leadership of the Commission's Chairman, Dr. Robert Q. Marston.

Introduction and Chairman's Commentary

Robert Q. Marston, MD

The joy of discovery molds each of us individually as it has molded the human race. Thus evidence that many medical students fail to experience the excitement of scientific discovery and are discouraged by the science education essential for their profession has been an increasing concern to many. The ultimate goal of this Commission and the measure of its success is increased student enthusiasm for learning science throughout a lifetime of professional practice. Achievement of this goal requires significant changes in the rich yet varied resources available to medical schools.

Evidence of dissatisfaction with medical education reported in a 1989 Louis Harris survey and expressed in discussions with many involved with medical education led to the formation of The Robert Wood Johnson Foundation Commission on Medical Education: The Sciences of Medical Practice. The Commission sought to understand more clearly the forces requiring change in medical school science education. In the early stages of its study, the Commission did not recognise the full implications of the changes in science or the magnitude of the reform of medical education already under way. With time, the Commission engaged in a process of discovery that resulted in our conclusion that the educational environment in many of the nation's medical schools is undergoing significant transition. Almost a century ago, Sir William Osler stimulated a new environment of relevance and enthusiasm for learning by bringing medical students to the bedside. Today there is a similar but even more urgent need for students to appreciate the relevance - and, indeed, the excitement - of applying today's scientific advances to the practice of medicine. While our report, *Medical Education in Transition,* represents a consensus of the Commission's views, supplemental materials provide the contributions of individuals and groups that guided the Commission to its conclusions. This report is the result of a process that sought the wisdom of many concerned with education, science, and health care. Clearly we can include only samples of the rich array of documents and testimony we reviewed. Some of the statements in the consensus report, in the earlier interim report, and the individual papers and statements are controversial. From beginning to end, our process has invited and welcomed debate on a wide range of views in the recognition that true and lasting improvements can come only when the schools and those who support them deem change necessary. Some schools already have made such decisions, in some instances many years ago; others agree in principle with some or even all of our conclusions but cite insurmountable problems of implementation.

We hope that we can focus attention on a very serious problem - that medical students all too often are not engaged by the science component of their education. We hope that we can stimulate continued discussion of the need for schools to respond to the advances in the biological sciences, the new significance of the behavioural sciences, and the emergence of newer sciences. We have included some examples of directions being taken by schools in The Robert Wood Johnson Foundation's programme in medical education, Preparing Physicians for the Future.

We emphasize the magnitude of change under way in medical education. Dr. William O. Baker, co-chair of the American Association for the Advancement of Science Project 2061, notes that calls for changing science education are similar to our own: the integration across disciplines; the need to capture more fully the benefits possible from advances in science and technology; and strategies to orchestrate efforts more effectively to achiev educational goals.

Our process, interactive in nature, has been characterised by five phases. From the outset, the Commission met with a number of organisations to inform them of our charge and to invite their views. The Commission's early meetings had presentations by individuals and papers by members of the Commission. (Those by Drs. Bloom, Purpura, Prockop, and the subcommittee on the behavioural sciences are a few examples of the Commissioners' work included in this volume). A review of the literature on science education and previous attempts by national groups to reform medical education was conducted.

The second phase was a time for the Commission to discuss among itself the information that it had received, to focus its attention on prominent issues, and to prepare some preliminary consensus positions. The production of an interim report was both an outcome of this phase and the initiation of the third - a formal effort to work with medical schools and organisations that support them. Among the many benefits of the discussions during the summer of 1991 was the clear conclusion that medical education is in transition. This view was documented initially in a conversation with Dr. Harry S. Jonas of the Liaison Committee on Medical Education, who encouraged us to consider the evidence that change is already under way in many of the nation's medical schools and that educational programmes are changing along the lines that we described in our interim report.

Similarly, an early focus on the impact of the revolution in biology for medical education emerged from a workshop meeting with representatives of medical school departments within the Council of Academic Societies. Valuable intellectual discussion, criticism, and support for the Commission's preliminary positions characterised this fourth phase of activity. In addition, this intellectual and interactive process has led to a report that incorporates diverse views rather than one that is a prescriptive report of the views of a few. Frequent exchanges with these groups continued through the final meetings of the Commission and in the final stages of producing this report.

The fifth stage emerged with an early draft of the final report. Again this draft was shared with those with whom we had met. We received invitations to attend the annual meetings of various basic science chairmen's groups. At those meetings we heard that the recommendations of our Commission were similar to those of past efforts, particularly the 1984 report by the Association of American Medical Colleges' Panel on the General Professional Education of the Physician and College Preparation for Medicine, the GPEP Report. While some saw both the Commission's interim and final reports as failing to set a new direction for medical education, other found our conclusions too revolutionary for practical implementation.

Having heard from advocates for various approaches to improve medical education - problem-based/small-group learning, organ system approaches, and so on - and rather than endorse one of these, the Commission chose to highlight the diversity of initiatives as evidence that medical education is in transition. As Dr. Samuel W. Bloom points out in his background paper, though many of the issues of the 1984 GPEP Report are similar to those that we have identified, the environment in which change can occur is much different in 1992. Specifically, 1)current advances in the biological sciences require integation across disciplines, a new ability to teach and learn form principles; and the rate of change requires life-long learning of science; 2) the repeated call for firmer foundations in the behavioural and social sciences, and now in the newer sciences of clinical epidemiology and informatics, are more compelling than in the past; and 3) there is today, we conclude, a new and greater receptivity to change in medical education than has existed since early this century. While scientific advancement is but one of serveral changes, it is central to any improvement in the preparation of physicians for the future. Finally, the Commission has had to assess the practical ability of schools to implement the changes it recommends. The Foundation's early experience of the parallel programme, Preparing Physicians for the Future: A Program in Medical Education, in which eight schools are actively implementing changes in keeping with the Commission's findings, shows these recommendations can be carried out effectively.

Table of Contents

PREFACE
Steven A. Schroeder, MD

INTRODUCTION AND CHAIRMAN'S COMMENTARY
Robert Q. Marston, MD

MEDICAL EDUCATION IN TRANSITION
Report of The Robert Wood Johnson Foundation Commission on Medical Education: The Sciences of Medical Practice

EVIDENCE OF CHANGE
MEDICAL EDUCATION IN TRANSITION: PARADIGM CHANGE AND ORGANIZATIONAL STASIS
Samuel W. Bloom, PhD

PREPARING PHYSICIANS FOR THE FUTURE
The Robert Wood Johnson Foundation's Program in Medical Education
Joseph E. Johnson III, MD; Annie Lea Shuster

OTHER FOUNDATION INITIATIVES IN MEDICAL EDUCATION
Richard C. Reynolds, MD; Annie Lea Shuster

PREPARATIONS FOR TRANSITIONS IN MEDICAL EDUCATION
William O. Baker, PhD

A NEW PARADIGM FOR BIOLOGICAL SCIENCE
BASIC SCIENCE AND CLINICAL PRACTICE: HOW MUCH WILL A PHYSICIAN NEED TO KNOW?
Darwin J. Prockop, MD, PhD

A NEUROSCIENCE CURRICULUM
Dominick P. Purpura, MD

CULTIVATING THE SHY FRUIT OF SCIENCE
Bernadine P. Healy, MD

A NEW SIGNIFICANCE OF THE BEHAVIORAL, SOCIAL, AND PROBABILISTIC SCIENCES
  THE SIGNIFICANCE OF THE BEHAVIORAL SCIENCES
  Eliot Stellar, PhD

  REPORT OF THE COMMISSION'S SUBCOMMITTEE ON THE BEHAVIORAL SCIENCES
  Robert J. Haggerty, MD; Samuel W. Bloom, PhD; David Mechanic, PhD; Herbert Pardes, MD

  CLINICAL EPIDEMIOLOGY - ONE OF THE BASIC SCIENCES FOR A MODERN MEDICAL EDUCATION
  Suzanne W. Fletcher, MD

ABOUT THE COMMISSION'S PROCESS
  OVERVIEW
  Robert Q. Marston, MD

  ENVIRONMENT FOR LEARNING
  An Interim Report of The Robert Wood Johnson Foundation Commission on Medical Education: The Sciences of Medical Practice

  REPORT OF A WORKSHOP WITH FACULTY REPRESENTATIVES AND COUNCIL OF ACADEMIC SOCIETIES LEADERS
  Ronald W. Estabrook, PhD

  RELATION OF ETHICS AND HUMAN VALUES TO THE SCIENCES OF MEDICAL PRACTICE
  David Barnard, PhD

ADDITIONAL COMMENTS OF COMMISSIONERS
  THE SCIENCES OF MEDICAL PRACTICE: A BASIS FOR LIFELONG LEARNING
  Robert J. Haggerty, MD

  SOME THOUGHTS ABOUT THE BEHAVIORAL AND SOCIAL SCIENCES AND MEDICAL EDUCATION
  David Mechanic, PhD

  THE PRACTICE ENVIRONMENT AND MEDICAL EDUCATION
  James G. Nuckolls, MD

  THE ROLE OF ENVIRONMENT IN MEDICAL EDUCATION
  David Satcher, MD, PhD

COMMENTARY ON THE COMMISSION'S FINAL REPORT
COMMISSIONERS' BIOGRAPHIES
APPENDIX

Annals of Community-Oriented Education
1993, Vol. 6, 197-206

Educating Medical Students: Assessing Change in Medical Education - The Road to Implementation

The Overview and the Summary of Strategies from the important ACME-TRI Report of the Association of American Medical Colleges (AAMC) are here reproduced by kind permission of Anderson, M.B. and Swanson, A.G. Educating Medical Students: Report of the Assessing Change in Medical Education - The Road to Implementation Project (1993). Academic Medicine, Supplement to Volume 68 (June).

The Introduction has been contributed to the Annals separately, in order to orientate the reader. *The Editor*

Introduction

The decade of the 1980s was a period of intense scrutiny of medical education. Numerous studies and reports offered recommendations for what needed to change in medical education. In 1988 the AAMC was offered the opportunity to assess what effect the recent ferment was having on how medical students were being prepared for practice in the 21st century. The Charles E. Culpeper Foundation provided a grant for the AAMC to undertake an assessment of change in medical education. The study was called "Assessing Change in Medical Education - The Road to Implementation" (ACME-TRI) to address these questions:

- How have the medical schools responded to the 1980s recommendations for change?
- Has the perceived readiness for change been translated into actions in the 1990s?
- What barriers still prevent schools from making the changes that academic medicine's leaders have acknowledged are needed?
- What strategies can be promoted to implement change?

Based on an extensive survey of North American medical school deans, the report documents the approaches schools have taken to change medical education. It also provides a summary of the perceived and real barriers to changes identified by the deans and offers strategies to be carried out by the schools with support from organisations like the AAMC.

The mandate is now to use the information provided by the schools and all those who participated in the project to see that change does occur in medical education. Thus, when another report on medical student education is commissioned 20 to 30 years from now, the authors should not be able to use quotes from 60 years ago to illustrate the need for change.

M.B. Anderson

****

Overview

This report documents - and describes ways of changing - a disturbing reality: over the last 60 years, most medical schools have done little to correct the major shortcomings in the ways they educate their students, even though these deficiencies have been documented repeatedly.

The report's title, Educating Medical Students: Assessing Change in Medical Education - The Road to Implementation (ACME-TRI), reflects its main contributions, which are unlike those of previous reports on the status of medical students' education.

> It identifies the recurring problems in medical students' education that have been reported from the 1930s through the mid-1980s.
>
> It documents, through responses to the 1990 ACME-TRI survey, that most medical schools have not solved these recurring problems.
>
> It summarizes the schools' view of the barriers to solving these problems, recognizing that faculty members have done what they can within the wider barriers engendered by aspects of the medical education and health care cultures. In brief, the specific barriers reported are
> - faculty members' inertia;
> - lack of leadership;
> - lack of oversight for the educational programme;
> - limited resources and no defined budget for medical students' education; and
> - the perception that there is no evidence that implementing changes will make the necessary improvements.
>
> The report identifies strategies to assist schools in overcoming or minimizing the barriers they have identified, so that they can provide a sounder and more complete education to medical students.
>
> And last, but most important, it provides a map for action by medical schools and national organisations, like the Association of American Medical Colleges (AAMC), to implement the strategies identified.

As its title suggests, the ACME-TRI project embodies at least two phases. The first is "assessing change in medical education"; the second is "the road to implementation". This report presents the information gathered during the first of these phases, which is now complete, and, in its concluding section, the report describes the second, future phase in a blueprint for action by medical schools and national organisations.

The report should be read in the context of ongoing efforts at many medical schools to change the way they educate their students. It is written to be a living document, one that must have a life beyond the printed page and that engenders action by all those concerned with medical students' education. It is not enough to reiterate the problems that have been widely reported since 1932, nor to remind schools that their efforts to change have not been very successful. The strategies identified are specific and include approaches for implementing change. The report concludes by describing future developments envisioned for the implementation phase of the project.

We believe that the ACME-TRI report serves as an important beginning for the many crucial changes in medical students' education that have always been possible and that are still possible, even in today's climate of tight budgets and a changing health care environment. These changes must be made so that medical students' education can take its rightful place in academic medicine alongside research, residents' training, and patient care.

August G. Swanson, principal investigator, and M. Brownell Anderson, project director, and members of the Report Writing Committee: Stephen Abrahamson, Harry N. Beaty, George A. Bryan, Susan Carver, Charles P. Friedman, Page S. Morahan, Caroline Reich, Cornelius Rosse, Henry M. Seidel.

Summary of Strategies

For the reader's convenience, here is a summary of the strategies to achieve educational change that are presented in the five sections of this report.

This summary is in two parts: the first presents the strategies proposed for the schools. The second part summarizes specific strategies to be carried out by national organisations like the AAMC.

Strategies Proposed for the Schools

From Section One: Organisation of the Programme and Management of the Curriculum.

> Integrated and coherent educational programmes for medical students will be possible only if medical schools develop the organisational and financing structures to support such programmes. To do this most effectively, deans and their faculties must learn how integrated, coherent, and coordinated education programmes for medical students can be developed and administered in today's complex academic medical centers. Although the number of such programmes is small, sufficient examples exist to demonstrate the feasibility of this model.
>
> A medical school must have a specific budget for its programme for medical students' education. Determining the fraction of general revenue funds that

departments apply to students' education will be a first step. Because many faculty members do not realise that they are compensated for their participation in the education of students, specifying the proportion of general revenues that support their involvement in their students' education will help them and the administration see the importance of that involvement. Specifying revenues also will require alterations in the nonspecific allocation of these funds to departments and divisions so that a school's education programme for medical students will clearly be identified as a distinct responsibility of the school's faculty.

Pressure to have central management of medical students' education will increase. For example, in 1991, the Liaison Committee for Medical Education added an accreditation standard that requires central curriculum responsibility and accountability. The requirement states: The programme's faculty is responsible for the design, implementation, and evaluation of the curriculum. There design and management of a coherent and coordinated curriculum. The chief academic officer must have sufficient available resources and authority provided by the institution to fulfil this responsibility.

To fulfil this requirement, all schools will have to designate a "chief academic officer" and give the person holding that position the required resources and authority. If strictly interpreted, this standard will require schools to centralize their programmes in the ways recommended in the 1980s reports.

Medical schools should develop a system for both peer and student evaluation of instruction and the curriculum. This will serve several functions. On a symbolic level, it says to all concerned that all participants in the educational process are accountable for the quality of the process. At the substantive level, it provides useful information about what is working and what is not.

From Section Two: Faculty Development

Schools should establish an educat*or* track with tenure for both basic science and clinical faculty members; this track would reward excellence in teaching and would establish a career pathway for those pursuing excellence in that area.

Medical-discipline-based forums should be created on the national level, and those that exist should be encouraged to provide support for faculty members interested in teaching, publishing educational research, organizing forums for the presentation of invited papers and reviews, and exchanging educational materials (for example, software, patient cases, new teaching approaches).

Clinical disciplines that provide required rotations for medical students should assign a faculty member and a senior resident at each site to assume responsibility for the medical students' education programme. These new responsibilities should be distinct from those related to clinical service activities.

Senior residents and junior faculty who assume these responsibilities should be especially prepared by attending teaching institutes and workshops.

Principal teaching faculty should not be expected to support themselves from income derived exclusively from their clinical services. Their financial support should reflect the importance of their teaching.

The development of advanced methods and materials for medical education can be stimulated through grants from both the public and private sectors. These should include grants for developing computer software and for establishing alternative curricula.

Schools must create meaningful cross-disciplinary teaching opportunities to encourage faculty members to assume educational responsibilities beyond their specialised area of practice or research. Equally important, faculty must participate in cross-disciplinary examinations of students. An example of a specific approach to achieve this is problem-based learning. Problem-based learning is a method of teaching around case problems (see section four) in which the role of the faculty member is one of resource person rather than expert. This approach fosters interdisciplinary teaching and stimulates faculty members in the basic and clinical sciences to become involved in teaching subjects outside their respective disciplines or specialties.

From Section Three: Evaluation of Students' Achievement

Current examination techniques that rely principally on students' abilities to recall memorized information should be complemented by examinations that assess students' problem-solving and patient-evaluation skills. As faculty members become familiar with such examinations, they should gradually introduce them to replace multiple-choice testing, which is now the most common testing approach.

The Objective Structured Clinical Examination (OSCE) is an example of the kind of assessment method mentioned in the previous paragraph. It can be adapted to the requirements of each discipline at each school. The OSCE, in place at many schools, represents an alternative form of evaluation to assess students' knowledge and clinical skills and is an approach that all schools should implement.

From Section Four: Educational Strategies

Faculty members must provide administrative mechanisms to permit cross-disciplinary consultation and agreement about what should be included in medical students' education. At present, this rarely occurs except at schools were faculty members from several disciplines are engaged in teaching the basic sciences that pertain to each organ system.

Describing the exit objectives that students must achieve in order to graduate can foster interdisciplinary discussion and action. These objectives can be formulated by having faculty members from each basic science and clinical discipline specifically describe the discipline's graduation objectives and then ask representatives from the other disciplines involved in medical students' education to review and criticise those objectives. If this process is appropriately managed and applied to programme development, a coherent programme of manageable dimensions can be evolved. Without such interdisciplinary cooperation and oversight, little will be accomplished.

One concrete approach is to organize brainstorming sessions among some faculty to devise a list of competencies and classify them as knowledge, skills, or values - attitudes. The list should be given to a group of faculty members selected from both basic science and clinical disciplines to put in rank order; the process could be continued with other faculty members to develop consensus.

The list of competencies just described could be used as a basis for interviewing residency directors and employers of physicians in the different disciplines to determine what competencies they view to be essential. One object would be to see the entire array of competencies that are perceived as important for physicians in each specialty and subspecialty and to note what the important differences in competencies are across the specialties. This process could serve as the focus for a consensus workshop and survey by the AAMC and could be reconvened periodically to respond to the changing health care needs of society.

Faculty members' first goal should be to foster their students' lifelong learning by helping them develop their learning skills. Teaching students to memorize and recall information should be a secondary goal. In this way, faculty members become students' mentors, guiding their learning rather than providing information that students are expected to memorize and recall for tests.

If there is to be significant improvement, faculty members must assume responsibility for educating medical students and must be prepared to accept training and criticism about their teaching.

Schools should make a service for computer-based literature searches available to students at low or minimal cost and should train students how to use this resource.

From Section Five: Information Transmission and Management

Schools can consult the GEA Directory *of Presentations and Workshops* to find those workshops that offer training in educational techniques that are alternatives to lectures.

At present there is insufficient grant support available for faculty members who are willing and capable of developing medical education software programmes. The AAMC and its constituent institutions should strive to increase support both from the private and public sectors. Consortia of medical schools that share computer programs should be encouraged and funded.

There must be facilities to train faculty members in the use of computers for medical education. Such training is as essential as training in new research techniques. Training programmes should be integrated into national and regional workshops to introduce faculty members to computer technologies.

Medical schools should require faculty members who have responsibility for medical students' education to become skilled in the educational application of computers.

Medical schools should establish some organisational structure to promote the use of computers in medical education.

Strategies for the AAMC and other National Organisations

Databases and Resources

The Group on Educational Affairs (GEA) of the AAMC should develop strategies and complementary programmes at both the regional and national levels to assist administrators and faculty in the implementation of more centralized educational programmes at medical schools. These strategies should emphasize approaches to achieving the cooperation and consent of a school's governance system. At the regional level, the GEA should bring together its members from schools that are attempting to improve their students' education to encourage the members to share ideas and approaches to change.

The AAMC should develop databases of information about the approaches medical schools are taking to improve their students' education programme and should make these databases available to medical schools as a first step in assisting them to implement the changes identified in this report.

The AAMC also should develop a database that contains a comprehensive collection of educational innovations and approaches being used to implement curriculum change. This could foster rapid identification and distribution of useful methods.

An AAMC-sponsored consortium for sharing and documenting the use of educational materials developed at individual schools should be established.

The AAMC should work with medical schools experienced in developing problem-based cases to develop a central resource of such cases to promote sharing among disciplines and among schools.

The AAMC and the NBME could work together as a coordinating body and clearinghouse for the development and testing of new evaluation procedures. For example, a combined bank of problem-solving multiple-choice questions could be generated in the various disciplines; other types of evaluation methods could be submitted for distribution to schools; multi-institutional trials of new evaluation methods could be conducted; and workshops on evaluation methods used in other settings (higher education, industry, government) could be conducted.

The current efforts of several schools to establish consortia to share information and approaches to evaluation should be supported and encouraged through the dissemination of information by the AAMC and the foundations supporting those efforts.

The AAMC, working with the schools, should develop a resource database or clearinghouse of available assessment techniques.

The AAMC, with significant assistance from several medical schools, has developed a prototype computer-based database of the curricula of North American medical schools that can be used by individual schools to analyse and monitor the content of their curricula. This database should be made available to all schools, and sessions should be included at national and regional meetings to introduce faculty members to this database.

A library of medical education software that has been critically reviewed should be established. The AVLINE model, which the AAMC developed for the National Library of Medicine in the 1970s, could be applied to reviewing and cataloging software.

Workshops and Collaborative Efforts

The following workshops and opportunities for faculty developments should be established by the AAMC and other national organisations.

Integrated and coordinated education programmes for medical students will be possible only if medical schools develop the organisational and financial structures to support such programmes. To do this most efficiently, deans and their faculties must learn how integrated, coherent and coordinated education programmes can be developed and administered in today's complex academic medical centers. Although the number of such programmes is small, sufficient examples exist to demonstrate their feasibility.

The AAMC, working with schools that have developed such programmes, should establish workshops to assist its constituents to develop the administrative and financial management systems that are needed. The management workshops that the AAMC provides for newly appointed deans should include sessions on revising medical students' education.

A new management workshop must be developed to marry the administrative, political, and financial issues that all deans address when they work to improve their education programmes.

The AAMC, working with the deans of the medical schools, should define a set of goals and objectives against which schools can assess their objectives. Each dean should consider requesting the school's faculty members to write, in 20 words or less, their understanding of the mission of the school. This exercise can serve as the point of departure for a discussion about establishing a school's unique institutional goals, emphasizing the importance of the education programme at the school, and ultimately establishing instructional priorities.

The AAMC's Council of Deans and Council of Academic Societies, working with the Group on Educational Affairs, should elaborate the necessary criteria and methods for documentation of faculty members' teaching accomplishments.

The AAMC should expand its efforts to introduce faculty members and deans to its workshop about evaluation systems.

The AAMC should expand its efforts to introduce medical school deans to the Objective Structured Clinical Examination (OSCE) assessment technique and to the comprehensive examinations developed at some medical schools, and should provide national and regional opportunities for faculty members to learn about alternatives to multiple-choice examinations.

The AAMC should develop training programmes that provide assistance in improving teaching skills and that are sufficiently challenging to capture the attention and willing participation of faculty members.

The AAMC should continue to encourage schools to implement problem-based, small-group learning methods by expanding its Management Education Workshop programme. This should incorporate training for faculty members who assume the responsibility of being small-group facilitators.

At present there is insufficient grant support available for faculty members who are willing and capable of developing medical education software programmes. The AAMC and its constituent institutions should strive to increase support both from private and public sectors. Consortia of medical schools that share computer programmes and the cost programme development should be encouraged.

Annals of Community-Oriented Education
1993, Vol. 6, 207-217

Observations on Redirection of an Iceberg: Leading Educational Reform in Medical Schools

Ron W. Richards
W.K. Kellogg Foundation
Battle Creek, MI, United States of America

Abstract

Medical schools are being challenged, again, to increase the number of generalists or primary care practitioners. To do so, medical schools must change in significant ways, particularly by increasing the proportion of education in non-hospital community settings. This paper suggests several salient features of the medical school as an organisational structure and offers eleven specific elements to successful leadership of reform in medical education.

The Problem

A shortage of primary care physicians is not a new problem. In the 1970s the concern was articulated as a problem of geographical and specialty maldistribution. The Alma Ata Declaration of 1978 established the commonality of world-wide concern for the need for primary health care. A proportion of that need, but certainly not all of it, is related to a shortage of primary health workers, including physicians. In 1979 the Network of Community-Oriented Educational Institutions for Health Sciences was established to encourage relevance of health personnel education to the needs of communities. Most of the founding institutions of the Network were new faculties of medicine dedicated to creating community-based and problem-focused approaches to the education of physicians as a means of increasing the number of their graduates who would practise primary care in underserved rural and urban areas.

Little progress appears to have been made. In spite of the achievements of some of the Network's goals, and they have been noteworthy in a number of cases, there has not been sweeping world-wide or country-wide adaptation of medical education for relevance to highest priority health needs. In 1989 an international conference sponsored by The World Federation of Medical Education issued the Edinborough Declaration stating, "*the aim of medical education is to produce doctors who will promote the health of all people, and that aim is not being realised in many places despite the enormous progress that has been made during this century in the biomedical sciences... The defects have been identified for a long time, but efforts to introduce greater social awareness into medical schools have not been notably successful. Such factors have led to mounting concern in medical education about*

Requests for reprints should be sent to R. Richards, W.K. Kellogg Foundation, One Michigan Avenue East, Battle Creek, MI 49017-4058, United States of America.

equity in health care, the humane delivery of health services and the overall costs to society" (World Federation on Medical Education, 1988). In 1991 the World Health Organization in a document entitled, *Changing Medical Education: An Agenda for Action,* stated "*... one of the fundamental reasons for dissatisfaction (of consumers with the delivery of health care) remains a general lack of competence on the part of the medical and health professions to meet new challenges... Dramatic changes will be required in medical practice; these will call for important interventions including an equally dramatic change in medical education*" (World Health Organization, 1991).

In the United States, the data of the Association for American Medical Colleges, for example, show that the percentage of U.S. medical school seniors planning to enter primary care specialties has fallen from 37.3 percent in 1981 to 14.6 percent in 1992 (Kassebaum et al., 1992). The percentage of U.S. medical school seniors planning careers in family practice has fallen from 17 percent in 1986 to 13.7 percent in 1989 (Association of American Medical Colleges, 1990). The reasons for the decline in the number of medical school graduates choosing primary care specialties include the burden of debt carried by graduates, potential earnings, relative status, and lifestyle expectations. The nature of a student's undergraduate medical education also probably plays a significant role. Swanson, for example, examined why seniors may be turning away from careers in internal medicine. Sixteen percent of 829 seniors surveyed who graduated in 1989 and decided against internal medicine cited negative clerkship experiences. Other experiences (Adkins et al., 1987; Verby, 1988; Brazeau et al., 1990) suggest that the nature of the educational experience can positively influence specialty and geographical choice. Medical education appears to be a part of the problem and it must also be part of the solution. The president of the Association of American Medical Colleges, Robert Petersdorf has stated "We are not graduating the kind of physician most needed by our society" (Petersdorf, 1990). A redirection of medical education is needed.

Towards Change

There are many ways to adapt medical education, so that more graduates are better suited for and committed to primary care practice. All these adaptations, however, seem to have a common theme - provide students with a significant amount of positive, longitudinal experience in community-based primary health care outside the tertiary care hospital. Effective education for primary health care calls for several fundamental shifts in the way medical education is viewed:

1. **A shift from an almost exclusive focus on the acquisition of knowledge and skills, to the process of socialisation**. While the acquisition of knowledge is important, it is not the essence. It is through socialisation that students acquire the values that shape their notion of professional self;
2. **A shift from viewing the character of the curriculum as an intellectual abstraction, to seeing it as a function of the clinical settings where students are assigned and the clinician/teachers serve as role models**. The present choices of settings for medical

education are inadequate. Students are either based in large teaching hospitals and affiliated clinics or, to a lesser extent, in practitioner settings for field experiences. Under these circumstances, medical education promotes a mind set that affects students and graduates, that separates a high quality specialty world from a lower quality community-based practitioner world;

3. **A shift from academics having the exclusive right and privilege to determine what should be the character of medical education, to sharing those responsibilities with communities**. Communities are willing and able to join in partnership with academic institutions to address important local health care issues, and educators should involve them.

Taken together, increasing the number of graduates who choose to practice primary care in underserved areas calls for fundamental adaptations in medical schools. Students experience a fragmented education which is an extension of the fragmented departmental and subdepartmental organisation of hospital-based practice and education. Schools must replace this fragmented educational experience with cross-specialty, longitudinal, non-hospital experiences for a significant amount of the total training. Such adaptation is no small leadership challenge, for in sociological terms it calls for **integration** in a medical school organisational structure that embraces **differentiation**. An important topic, therefore, is how to lead change in medical schools. Before offering specifics about successfully leading reform in medical education, a brief summary of the recent scholarship on leadership and the character of faculties of medicine as organisational structures will be useful.

A Challenge for Leadership

The subject of leadership is very popular (Bennis et al., 1985; Kanter, 1983; Peters et al., 1985; Senge, 1990; Kouzes et al., 1987). Two recurring themes were originally stressed by Burns, in a landmark book, *Leadership* (Burns, 1978). First, Burns articulated the need for leaders to be moral visionaries (transformational leadership). Second, Burns called attention to followers; there are, of course, no leaders without followers. Burns tied the two themes together by suggesting that the transformational leader recognizes and exploits potential followers' needs or demands, looks for what motivates followers and seeks to satisfy higher needs.

A third theme in the recent leadership literature is that participatory management is the most effective. While there are variations, it is stressed that leaders of successful organisations build teams and create open environments, where ideas and learning from mistakes are valued. Such concepts draw on the human relations traditions in the study of organisations (Etzioni, 1961; Mazlow, 1954). A fourth theme in the leadership literature is that good leaders know themselves. They have a sufficiently high understanding of their personal strengths, weaknesses, and motivations that they can let go. They allow others to grow and be as good as they can be, even if that means being better than the leader.

Most of the leadership literature derives from research about and experience in U.S. corporations. Potential leaders are thought of as corporate managers - those on the way up, and those who have arrived. In the abstract, it is hard to argue with leadership guidance that urges vision, attention to followers, participation in decision making, and a full understanding of self. Corporations may become more profitable and competitive in a rapidly changing world economic environment when top management gives away some of its power via collaborative processes. Medical schools, however, are not the same as corporations.

Faculties of medicine are loose arrangements of professionals. In perspective analysis, Bucher and Stelling, (1977) attribute four characteristics to organisations of professionals. All of them are particularly pertinent to medical schools world-wide. These characteristics are: 1) professionals typically build their own roles in an organisation rather than fitting into preset roles; 2) there is a tendency for professionals to differentiate themselves from colleagues by narrowly defining their expertise; 3) the different types of professionals in an organisation each have their own requirements for carrying out their mission, setting up conditions for competition and conflict; 4) professionals in organisations use a bargaining process to influence the setting of goals and policies of the organisation; and 5) power is not identical with the position held in a professional organisation and seems to be a fluid phenomenon shifting in response to different issues.

Whereas most government and corporate organisations operate "top-down" with influence being positional, faculties of medicine (and most other faculties for that matter) function "bottom-up" with influence being individualistic and expertise-based. It is a very simple extension of such organisational character, then, that most medical school deans are elected for a limited number of limited terms. To the extent that medical school deans are leaders, and this is by no means always the case, their modus operandi are well described by Baldridge when he quotes Dahl, *"the (elected official) was not at the peak of a pyramid but rather at the center of intersecting circles. He rarely commanded. He negotiated, cajoled, exhorted, beguiled, charmed, pressed, appealed, reasoned, promised, insisted, demanded, even threatened, but he most needed support and acquiescence from other leaders who simply could not be commanded. Because the (elected official) could not command, he had to bargain"* (Baldridge et al., 1975). So too, must medical school deans.

Bolmans and Deal, (1991) synthesize studies of organisations and leadership around four frames. The structural frame "emphasizes the importance of formal roles and relationships". The human resources frame focuses on individuals who inhabit organisations. They have needs, feelings, and prejudices, a capacity to learn, and frequently an inclination "to defend old attitudes and beliefs". The symbolic frame "abandons the assumptions of rationality" and views organisations as "cultures that are propelled more by ritual, ceremonies, stories, heroes and myths than by rules, policies, and managerial authority". The political frame "views organisations as arenas in which different interest groups compete for power and scarce resources". Conflict is a frequent occurrence as is bargaining, negotiation, coercion and compromise.

Most likely, successful leaders both know about and use the four frames described by Bolman and Deal. The analysis presented here of leading change in medical schools, however, takes the political perspective as the point of departure. The choice is not a random one. Systematic observation of approximately 30 medical schools in the United States and other countries over approximately 15 years, suggest that educational reform is a highly political process and not readily understood as such (Richards et al., 1987; Bussigel et al., 1988). Further, there is evidence to suggest that the political perspective is a consistent predictor of the success of both leaders and managers (Bolman et al., 1990). Perhaps more importantly, while the extent of individual and departmental control and negotiation seems to be readily understood in faculties of medicine, it is seldom discussed, certainly not in relation to the exercise of leadership by deans.

In fact, two terms used frequently in this paper often carry very negative connotations, especially in light of their cultural interpretation in many countries. These terms are: "power" and "political". For our purposes, the terms are intended to be neutral. Neither bad nor good. Whereas "power" connotes governmental and/or militaristic coercion in some countries, it is used here only to suggest a variety of reasons why some people willingly, and sometimes unwillingly, do as others wish, including trust and respect for expertise and influential connections. "Political" is also sometimes a negative term implying the abuse of power by governmental officials. "Politics" is often referred to with disdain as are "politicians." Such a negative connotation is not intended in this paper. As noted earlier, "political" is seen simply as any interchange or negotiation for scarce resources such as money, reward, space, time and personnel.

Leadership in medical schools - getting people to follow - has a lot to do with power. Whatever the organisational type, the power inherent in a leadership position is usually not sufficient to achieve the responsibilities inherent in that position (Kotter, 1985). Or as Bennis and Nanus, (1985) put it, "power is conspicuous in its absence". In the case of medical school deans, power or powerlessness will significantly influence their success in leading educational reform.

Successful Leadership

Two factors associated with power figure prominently in successful leadership of educational change in medical schools. The first factor is the configuration of power inside a medical school. The second factor that affects the exercise of medical school leadership is the power potential that exists in the relationship of the school to its external environment.

Internally, faculties of medicine are usually organised into powerful departments. This departmentally dominated structure is a function of both the high priority placed on individual expertise and research and the autonomy granted to professionals in all kinds of organisations. Departments have objectives particularly related to the self-interests of their members. There is a continual process of definition and redefinition, alignment and realignment, within and between departments to maximise the commonality of self interest of its members. Departments of medicine, for example, often have evolved to have neurology sections; paediatric departments generally have paediatric neurology sections; and physiology has neurophysiology. Frequently the pieces are reformed into some new organisational structure, in this example perhaps a department of neurosciences. Departments are vested with power over reward and resources and, therefore, over careers. A medical school is not so much an organisation as it is a mini united nations. Departments frequently declare their sovereignty on the basis of expertise and approach education from this point of view.

In the highly departmentalised organisational structures of medical schools, deans usually have little power to redirect their schools. The role of the dean is frequently one of helping departments to maximise their individual goals.

Developing effective means of preparing primary care physicians calls for cross-departmental collaboration. In this case a dean's role is to get departments to work together. Without sufficient power, it cannot be done, and it cannot be done quickly. The issue is how to go about getting more power, how to use effectively what one has, and to sustain the influence until the system has more permanently adapted to the change.

The second leadership factor is the power potential that exists in the relationship of the school to its external environment. Most commonly, the linkages of a medical school to various constituencies are through the clinical departments - to hospitals, residency or postgraduate training programmes, and government agencies, to name a few. In fact, the internal power of these departments in the U.S.A. is a function of the linkage to patient care revenues and research funding.

There is power in the linkages of departments to the external environment; there is also potential power in the linkages of the dean and the medical school collectively to its external environment. However, if change is a goal, these linkages must be to different constituencies than hospitals and practitioners of the provider system. These linkages must be with communities - corporations, human service agencies, people without access, and government bodies, to name but a few.

To restate, in order to successfully lead change in medical education it is particularly useful, but not sufficient, to view a medical school from a political perspective, that is, seeing the organisation as multiple interest groups competing for power. Two aspects of power must be understood fully - the configuration of power inside a medical school and the potential power that derives from the nature and extent of a medical school's linkage with its external environment. Here, then, are some "bits of advice" about how to lead successfully the redirection of medical education. The following is based on the above perspectives and on many leadership stories of both success and failure encountered during the consulting and research work of the author.

Advice

1. Build a team

Individual leaders, alone, cannot carry out reforms to the point of sustaining the required organisational adaptations. Leaders need influential allies, like-minded members of a leadership team. One of the most obvious reasons for such a core group is that the required organisational adaptations take longer than the time during which any one leader, particularly a dean, will be in post. This is certainly the case in faculties of medicine where the dean is elected and the term of office is limited.

2. Have a vision, articulate it simply

There is power in the vision and conviction of a leader, **if** they are understood. The direction and rationale for a change should be believable to the followers, and able to be simply stated. Three of the founding leaders of the Network schools were visionaries but credible to the establishment in each of their countries. Through the clarity of their plan, its underlying values and their ability to communicate it effectively they were motivators for reform. In one case the dean declared that members of the local community would participate in the selection of medical students. In another case, the reform depended on linking the delivery of health services with medical education. None saw educational methodology alone as the reform; they delegated the "how" and focused their attention on "what" and "why".

3. Connect the rationale for change to organisational history and values

Organisations cannot tolerate for the long term visions that are too far outside their historical character. Therein, sometimes, is the difference between a leader being perceived as a visionary or a fanatic; in academia fanatics are seldom tolerated. Successful change strategies appear to be built on a thorough understanding of an organisation's history and culture with special attention to pervasive values and purpose. In some cases in the U.S., for example, a mission for primary care education is simply outside the long tradition of some schools which have successfully garnered support for biomedical research and subspecialty medicine.

4. Analyse the internal power structure in relation to the desired reforms

Successful change strategies are based on accurately mapping the power configuration, particularly as it affects the intended changes. Sometimes, such a power configuration is obvious and sometimes it is not. Questions need to be raised. Who has the power? What is the basis for that power? What are the power coalitions? Why do they exist? What interests are served by them? In relation to your intended change, who is for it? Who is against it? In both cases, why? An educational reform at one medical school was not adopted for the long term because it was seen as impacting negatively upon research and clinical revenues. Such income generation is frequently the most dominant base of power. Another base is the department's influence on the careers of its members. In either case, unless there is long term financial support for the educational reform and some compatibility with career goals, it is likely to fail.

5. **Be prepared to negotiate some of the vision away**
No matter how much a leader may have come to believe that all facets of a major reform are equally important, they are not. For example, much time is spent on how and what to teach of the basic sciences when adaptation of clinical education is probably more important. It is necessary, then, to know which elements are negotiable and which ones are not. Bargaining is essential to effective leadership. Others must be given sufficient influence over the nature of the idea and how it is to be implemented, in order to have ownership in it. This attribute is sometimes difficult to find among leaders of reform, not surprisingly, for those that possess the necessary certainty about "why" and "what" needs reforming often do not tolerate alternative views, even about "how".

6. **Think outside in**
Few of us who professionally have been socialised to the role of professor think very much about the outside world and its influences. Our place of work keeps us pleasantly, but sometimes dangerously, insulated from reality. Successful leaders of reform know that seldom does any professional organisation change solely from within. These leaders have not waited for some spontaneous social consciousness to bubble up from within the faculty ranks, for all professional organisations seem to change primarily in response to external pressure. Successful leaders see their school as an open system, capable of influencing and being influenced by the socio-economic and political realities of the external environment. They identify, configure, and communicate forcefully the economic and political forces in ways that push internal response. They analyse power structures in their external environment as they do the internal ones. In one Southeast Asian country, a dean helped to conduct a national study of medical education and brought guidelines back to his own school for their response. By orchestrating outside pressure, the leader created a need for his school to change.

7. **Build coalitions, gain power by giving it away**
As noted earlier, it is not uncommon that the leaders of major institution-wide and integrated change are without adequate power, at least at the start, in relation to academic departments and hospitals. One way of changing this situation is to build multiple coalitions with external entities that have a stake in the change rather than the *status quo*. State and local government, community organisations, and corporations are examples of sources for coalition building. New structures can be created to link academic health centres with communities, and thus power can be gained by giving it away. Creating coalitions builds a new power base for leaders to move institutions. In the Kellogg Foundation's Community Partnerships programme (see Community Partnerships: Redirecting Health Professions Education towards Primary Health Care, this issue of the Annals) several institutions are sharing influence over the curriculum and research with representatives of the communities. Guiding principles are set, and, of course, tension

results when faculties deal with requirements influenced by communities. In effect, helping in a collaborative process to empower people in communities is a major part of leading change.

8. **Creating an organisational structure compatible with intended change**

Frequently organisational changes are not adequately supported by compatible organisational structures, and, over time, this incompatibility gets worse. Primary health care and education is an integrating concept. Organisational structures that are more integrative than discipline-based departments must be developed for curriculum, instruction, student assessment, and faculty rewards.

9. **When more deliberation is asked for - don't!**

Those affected by and through whom change will occur must be involved in shaping ideas and actions. Patience with faculty deliberation is critical. However, all the doubts, questions, and uncertainties will never be fully resolved. More time for planning is often sought. Doing what has not been done before involves risk. Facilitating a deliberative process is desirable; prolonging that process will contribute to failure, not to success.

10. **Prematurely declare success**

Hardly has the dust settled after the first announcement of the formation of a new approach, when successful leaders declare to the outside world the success of their approach. In one instance, each of the early years of a new medical school was marked by an international conference on evaluation of its reforms. On each occasion the likely future success was declared and commitment restated. Leaders see to it that faculty members write about the reform even before the faculty members think there is anything to write about. And the word gets out. Such declarations of success without evidence goes against the grain of scholars and researchers with more scientific inclination. However, educational reform is not a scientific venture, it is a continuous process of negotiation and renegotiation guided by vision. The attention, created by publicity, helps to move in the desired direction and gives visibility in new ways.

11. **Think big not small**

All significant change in organisations takes a long time and is evolutionary in process. Significant structural adaptation of the education for health professionals will not occur soon enough, if the first step is a small one. There is great fear of change, not least because we do not know if our self-interests will be as well served by a new structure as by the present one. Attempts will be made to modify proposals for change until the objectionable elements are minimised or turned to advantage. The overwhelming pressure will be, for example, to reduce significant curricular change toward integrated non-hospital experiences back to departmentally controlled and fragmented mini-clerkships. In the light of these dynamics, the greatest risk to success is to think small.

In Conclusion

While interpretation of the organisational context from multiple perspectives is the mark of an effective leader, the political perspective is frequently inadequately considered, seldom discussed, and infrequently taught. The strategies are about how leaders can acquire the power needed to do the job. Leadership is about power but it is not about control, nor hierarchical rigidity, nor about fear. It is not about managers who feel and act superior or demand obeisance. Leadership is also about empowerment, the giving of power to others to help achieve the collective goals of followers and leaders. Leading educational reform in medical schools is at least a two phased matter. In the first phase the dean and team must reset some of the rules and establish new boundaries. Then in a second phase, with new boundaries and using new rules, good leaders give the leadership of the enterprise to others. In this second phase, good leaders "...involve in some way those who must live with the results and they make it possible for others to do good work" (Kouzes et al., 1991). Phase two without attention to phase one reinforces the *status quo*.

With the societal forces being what they are, the deans of many - perhaps most - medical schools will not have a choice as to whether they lead educational reform toward primary health care education. From the stories of those who succeed and those who fail, lessons will be learned that add to and change this list of suggestions.

Acknowledgement

Special acknowledgement is given to the members of the Technical Advisory Panel from The Network of Community-Oriented Educational Institutions for Health Sciences for their contributions.

References

Adkins, R.J., Anderson, G.R., Cullen, T.J., Myers, W.W., Newman, F.S., & Schwarz, M.R. (1987). Geographic and specialty distributions of WAMI Program participants and non-participants. *Journal of Medical Education, 62 (10), 810-817.*

Association of American Medical Colleges Questionnaire. (1990).

Baldridge, J.V., & Deal, T.E. (1975). *Managing change in educational organizations.* Berkeley, CA: McCutchan.

Bennis, W.G., & Nanus, B. (1985). *Leaders: Strategies for taking charge.* New York, NY: Harper & Row.

Bolman, L.G., & Deal, T.E. (1990). *Images of leadership.* American Educational Research Association.

Bolman, L.G, & Deal, T.E. (1991). *Reframing organizations: Artistry, choice, and leadership.* San Francisco, CA: Jossey-Bass.

Brazeau, N.K., Potts, M.J., & Hickner, J.M. (1990). The Upper Peninsula program: A successful model for increasing primary care physicians. *Family Medicine, 22,* 352-355.

Bucher, R., & Stelling, J. (1977). Four characteristics of professional organizations. In: R.L. Blankenship (Ed.). *Colleagues in organization.* New York, NY: John Wiley and Sons.

Burns, J.M. (1978). *Leadership.* New York, NY: Harper & Row.

Bussigel, M.N., Brarzansky, B.M., & Grenholm, G.G. (1988). *Innovation processes in medical education.* New York, NY: Praeger.

Etzioni, A. (1961). *A comparative analysis of complex organizations.* New York, NY: Free Press.

Kanter, R. (1983). *The change masters: Innovations for productivity in the American Corporation.* New York, NY: Simon & Schuster.

Kassebaum, D.G., & Szenas, P.L. (1992). Specialty preference of graduating medical students: 1992 update. *Academic Medicine, 67,(11),* 800-806.

Kotter, J.P. (1985). *Power and influence: Beyond formal authority.* New York, NY: Free Press.

Kouzes, J.M., & Posner, B.Z. (1987). *The leadership challenge: How to get extraordinary things done in organizations.* San Francisco, CA: Jossey-Bass.

Kouzes, J.M., & Posner, B.Z. (1991). *The leadership challenge.* San Francisco, CA: Jossey-Bass.

Mazlow, A.H. (1954). *Motivation and personality.* New York, NY: Harper & Row.

Peters, T.J., & Waterman, R.H. (1985). *In search of excellence.* New York, NY: Random House.

Petersdorf, R.G. (1990). Three easy pieces. *Academic Medicine, 65 (2),* 74.

Richards, R., & Fülöp, T. (1987). *Innovative schools for health personnel.* Geneva, Switzerland: World Health Organization.

Senge, P.M. (1990). *The fifth discipline.* New York, NY: Doubleday.

Verby, J.E. (1988). The Minnesota rural physician associate program for medical students. *Journal of Medical Education, 63,* 427-437.

World Federation for Medical Education. (1988). *World Conference on Medical Education Report.* Edinburgh, United Kingdom: World Federation for Medical Education.

World Health Organization. (1991). Changing medical education: An agenda for action. Geneva, Switzerland: World Health Organization.

Annals of Community-Oriented Education
1993, Vol. 6, 219-229

Community Partnerships: Redirecting Health Professions Education toward Primary Health Care

Ron W. Richards
W.K. Kellogg Foundation
Battle Creek, MI, United States of America

Abstract

The Community Partnerships with health professions education initiative is seen as a way for the W.K. Kellogg Foundation to influence the education of health professionals in the U.S. and, indirectly, in other countries. The Kellogg Foundation's health programming, unencumbered by the need to find political compromises or to negotiate agreements, has increasingly assumed responsibility for contributing to the improvement of the U.S. health care system. The Community Partnerships programme is explained, and progress at the end of the first year is reported.

Health Care Reform and Health Professions Education

In many respects the U.S. health care system is inadequate. Thirty seven million people have little or no care and many of these are unemployed. For those who are covered by some form of insurance, 61 percent fear that they will not be able to afford health care insurance premiums. Fifty percent worry that their current benefits will be cut substantially and 50 percent are concerned that insurance will not cover huge medical bills (Kaiser Foundation et al., 1992). Numbers, however important they are, do not tell how deeply personal this issue is for each individual and their families. Russell G. Mawby, Chief Executive Officer of the W.K. Kellogg Foundation, shared his own concern in his remarks at the National Kick-off Meeting in September 1991 (Kellogg Foundation, 1991).

"I have had more than enough opportunity to be deeply involved - emotionally and in every other way - in my responsibilities and relationships with brothers and sisters, parents, friends. I have experienced it all - triumphs and tragedies, compassion, arrogance, selflessness, insensitive callousness, both the brilliance and the pettiness of the caring professions."

The health care system is not working for business and industry who are especially concerned about health care costs. In 1970 per capita expenditure for health care in the U.S. was $346; in 1990 it was $2,566; and in the year 2000, it is estimated to be $5,712. In other words, in the 30 years between 1970 and the year 2000, U.S. expenditure on health care per person will have increased more than 16 times. Today, this cost is more than 12 percent

---

Requests for reprints should be sent to R. Richards, W.K. Kellogg Foundation, One Michigan Avenue East, Battle Creek, MI 49017-4058, United States of America.

of U.S. gross national product. Projections suggest that it will be 16.4 percent by the year 2000 - if nothing is done (Levit et al., 1991).

The costs of the U.S. health care system are out of control for state governments as well. State level expenditure for health care is stripping the state's capacity to meet other human needs such as the education of children. In 1991, thirteen and six-tenths (13.6) percent of total state expenditures go for Medicaid, for example, and it is the only aspect of state expenditures that is significantly increasing its percentage of the total (National Association of State Budget Directors, 1991)

The health care system is not working for health professionals either. An American Medical Association survey reported that nearly 40 percent of young physicians in practice wish they had chosen some other career. And, 40 percent of the medical students wish they had chosen another graduate programme (Kellogg Foundation, 1991).

Whatever the ultimate solutions to U.S. health care problems, the Foundation believes that more primary care practitioners - doctors, nurses, pharmacists, and other health professionals, working together in communities, is an essential element. The number of such providers, however, continues to decline - only 14.6 percent of last year's medical graduates, for example, say they are going to pursue careers in internal medicine, paediatrics, or family practice (Kassebaum, 1992).

A premise of the Community Partnerships initiative is that one of the root causes of our crisis in health care, and a major source of our capacity to improve the system, lies in the way we educate our health professionals. The financing of the education of health professions, especially medical education, is tied to the fragmented, hospital-biased system for financing health care.

The Aim

Community Partnerships in Health Professions Education is an integral part of health programming of the Kellogg Foundation. It was initiated in July 1991 with the purpose of increasing the number of primary care practitioners — doctors, nurses, social workers, dentists, and other health professionals working together in communities. To achieve this, the Community Partnerships hope to redirect the education of health professionals by creating community-based, non-hospital, teaching centres which address **primary** health care, education, and research from a multidisciplinary approach. These model centres will be **academic** in that they will provide instruction, conduct comprehensive community-focused research and provide service. They will be **community-based** by creating new organisational partnerships between communities and institutions to assure the responsiveness of these institutions to community needs. They will be **primary health care** centres in that they will provide multidisciplinary, comprehensive, cost-effective primary health care. Students will be educated in these academic community health centres for significant amounts of time. When they graduate, we believe that many will choose to practice primary care in similar settings in communities of need.

The Intention

As a mechanism for affecting health policy, the Community Partnerships initiative, both the projects and the supporting strategies, has several key elements.

1. **It focuses on communities**. Through the creation of community partnerships with education of health professionals, it is expected that communities can affect change in educational institutions for the health professions.

2. **It provides both direction and flexibility**. All projects target on more primary care practitioners working together by moving education to community, non-hospital settings. Yet, each must adapt to local needs and circumstance.

3. **It is incremental**. Whatever the solutions to the crises in the U.S. health care system, more primary health care professionals - doctors, nurses, pharmacists, dentists - working together in teams, is an absolute necessity. Long term positive change toward comprehensive, coordinated, and cost effective care is expected to result by adding more primary care practitioners.

4. **It focuses on a specific positive vehicle**. In this case, the initiative takes on direction by mandating the creation of academic, non-hospital, primary care centres for teaching, research, and service.

5. **It recognises the need for policy changes.** Individual and collective effort is encouraged to redirect the funding of higher education for health professionals and to adapt state and federal guidelines to be more supportive of primary health care education outside hospitals.

Leadership and Model Development Phase

In 1989, to encourage the development of such innovative models, the Kellogg Foundation set forth general criteria for its Community Partnership. Health professions education institutions throughout the U.S. were invited to submit their proposals. More than 110 applications were received, and 15 institutions or consortia of institutions were invited to participate in a five-seminar series entitled the "Leadership and Model Development" phase. This 18-month seminar series was designed to help the representatives to create a model and a long-term strategy for changing their institutions.

This phase culminated in the selection of seven of these institutions for funding. A total of $47.5 million has been committed by the Foundation to this effort. The seven institutions will receive $6 million each. Additionally $5.5 million have been committed by the

Foundation to carry out five supporting strategies that are designed to help to strengthen the projects and increase their national impact. Funded institutions are:
Trustees of Health and Hospitals, Boston, MA (Boston University School of Medicine; Northeastern University School of Nursing; community health centres; and the Department of Health and Hospitals);
East Tennessee State University, Johnson City;
University of Hawaii at Manoa (Public Health, Medicine, Social Work, and Nursing);
Michigan State University, East Lansing (Allopathic Medicine, Osteopathic Medicine, and Nursing);
Morehouse School of Medicine, Atlanta, GA (with Georgia State University, Emory University, and Clark Atlanta University Schools of Nursing);
University of Texas at El Paso (with Texas Tech University);
University of West Virginia System, Charleston (includes West Virginia University, Marshall University, and West Virginia School of Osteopathic Medicine).

The Community Partnerships Initiative

The Foundation's conviction is that academic health centres must and will play a central role in helping to fashion solutions to the society's health care crisis. Health professionals see the need for change and many want to help. Academic health centres are usually aware that their future depends upon redirection toward community responsiveness. Yet many are trapped by a bureaucratic and governmental *status quo* that makes the creation of alternatives very difficult. Through Community Partnerships, the Kellogg Foundation is assisting a few institutions in creating new organisational structures, in partnership with communities. These structures are designed to be far enough outside the educational and health care *status quo* to be the basis for new primary health care-orientated funding patterns.

The Foundation has identified these new organisational structures as **Academic Community Health Centers.** The centrality of this organisational structure to the Community Partnerships is based on four observations: (1) The essence of health professions education is socialisation; while the acquisition of knowledge is important, it is not the essence. It is through socialisation that students acquire the values that shape their notion of professional self. (2) The nature of health professions education over the long term - its research, the educational experiences it offers, and the world view of the teaching staff - is a function of the clinical settings where academic health centres provide their services. (3) The present choices of settings for health professions education are inadequate. Students are either based in teaching hospitals and affiliated clinics or, to a lesser extent, in practitioner settings for field experiences. Under these circumstances, their education promotes a mind-set of a division between a high quality academic world and a lower quality practitioner world. (4) Communities are willing and able to join in partnership with academic institutions to address important local health care issues.
The seven Community Partnerships which have been funded address curriculum change,

research, multidisciplinary models of care, institutional change, new governance structures to link with communities, and allocation of resources. Each of these elements for the seven are summarised below.

Curriculum. All projects involve a minimum of medical and nursing education, and five of the seven involve other health professions. Some 40 percent of the proposed new curricula will be multidisciplinary; seldom in traditional curricula do medical, nursing, and other health professions students have any common educational experience during their training.

In medicine, the new education in the academic, community-based primary health care settings will range from 25 to 43 percent of the total curriculum. The number of students participating will range from 25 to 100 percent of a school's total enrolment. On the average, 70 percent of the medical students enrolled in these seven models will have 30 percent of their total predoctoral medical education in the academic, community-based, primary care centre.

In nursing, undergraduate and graduate training is involved. However, particular emphasis is being given to graduate nurse education. General bachelor degree requirements by universities and accreditation standards place severe restrictions on undergraduate nursing education. Even so, an average of 30 percent of the proposed new curricula for undergraduate nursing will occur in the academic, primary care settings. The percentage of the new curricula for graduate nursing training occurring in the academic, primary care settings ranges from 20 to 80 percent, the average is 30 percent. A significant percentage of the graduate nursing students will be involved, ranging from 30 percent to 100 percent. Other health related professions (primary social work, dentistry, public health, and pharmacy) will have smaller proportions of their curricula in the academic, primary health settings for smaller percentages of their total student bodies.

Research. Comprehensive research initiatives are being developed by the seven institutions, although not to be funded directly by the Kellogg Foundation. The research and scholarship occurring in the new academic, community-based health centres will build upon integrated conceptualisations of health that link biological, psychological, cultural, and social dimensions of health and illness. The impact of the environment on health and the role of health care providers as facilitators of health in individuals, families, and communities will be explored. Other research topics include roles played by nurses, social workers, and others in outreach and in the management of primary care problems; methods for assessing outcomes and cost/benefits; evaluation of forms of prevention, patient education, and self care activities. Some of these topics will be explored by one project alone; others will be explored collectively. Students will participate in these explorations just as they will in the provision of patient care.

Multidisciplinary Care. The seven proposals are creating multidisciplinary models for the delivery of primary health care services to a defined population, either through the creation of new centres or the adaptation of existing ones. These models will (1) serve as the entry point for patients; (2) provide a full range of basic services necessary to preserve health, prevent disease, and care for common illnesses and disabilities of clients, and provide services necessary to ensure proper utilisation; (3) provide the human support needed by patients and their families as they cope with health related problems; and (4) take responsibility for the ongoing management and coordination of personal health care services throughout the entire health care process, whether the patient is ambulatory or bedridden, at home or in the community setting, whether receiving care at a secondary or tertiary level. Through multidisciplinary teams such care will not be limited to those who find their way through the door of the clinic. Programmes are being developed with school systems, nursing homes, and home care services. By placing students in such settings, they will learn as members of the multidisciplinary health care team. They will learn about communities and people, unbounded by the halls and technology of tertiary hospitals. There, students will learn the values, beliefs, knowledge, skills, and commitment to help people that constitute community-based primary health care.

Institutional Change. In addition to the academic dimension that combines teaching, service, and research in the non-hospital environment, these seven institutions have developed strategies to redirect their institutions toward sustained attention to primary health care education. Senior leaders have committed themselves to taking the risk of changing their institutions in dramatic ways. New coalitions have been established with constituencies outside the traditional health provider networks of hospitals and physicians. Commitments have been made to communities. New internal management structures are being developed that allow the effective linkage of schools of nursing, medicine, and other health professions for multidisciplinary education, research, and service.

Governance Partnerships. Each institution has created a governance structure that bridges community and institutions for an effective partnership for shared policy making. These new organisational structures give communities ample opportunity to influence policy. Several institutions are prepared to share policy making over the traditionally sacrosanct areas of education and research in addition to health care services. Given such a linkage, it is expected that communities will be in a better position to affect social change.

Each of the seven demonstrates that the community and the academic institutions share the belief that these efforts go far beyond providing medical service to the community. More importantly, communities want this partnership because of the renewed hope it gives to its citizens. For example, the communities told of the need to provide role models (health professions students) to the local young people and how the community designed experiences to link these two groups together outside the traditional medical setting.

Resource Allocation. Although there is considerable variation, all institutions have contributed significant resources. Examples include space in existing buildings, renovation, new construction, and an unused building. New operating funds have been identified either from new state government appropriations or by internal reallocation. Also, funds have been obtained from other sources such as foundations. An original commitment of $29.1 million was made.

Progress after One Year

An assessment of the first year has been completed. It is based on information from several sources: site visits by the programme director; meetings with project directors, community representatives, and project evaluators. A major source of data is a comprehensive evaluation of the seven Community Partnerships conducted for the Foundation by an independent evaluation team. This analysis for 1 year is organised around the six major dimensions described above.

Curriculum. Achieving curriculum change is reported to consume an extraordinary amount of time as project staff politic, cajole, and negotiate with powerful department heads and curriculum committees. The seven projects are still on track to achieve substantial change in the educational institutions. Across all schools participating, the majority of students will be involved in the new initiative, thus reducing early concerns that this could be viewed as a temporary experience for a small sample of students.

Similarly, the schools are working towards a substantial portion of the curriculum in the academic, community-based health centres. Currently the health professions schools are anticipating that between 25-43 percent of the total curriculum will be spent in these community settings. Across all seven programmes an average of 40 percent of the students' time will be spent in multidisciplinary learning. These summary percentages reflect a sustained commitment to the original goals.

A curriculum is the product of agreement reached on what students should learn and how. In two Community Partnerships, curricular changes in medicine have not yet reached what was planned; in one other Community Partnership curricular change in medicine has exceeded the original plans; in the remaining four the changes are as expected. As a result of the Kellogg Foundation initiative, community representatives, nurses, doctors, social workers, public health workers, and others are working together on some curriculum decisions. The debate calls into question what it means to be a physician, a nurse, and a social worker. It raises serious questions where students should learn, whether a professor of nursing can teach medical students, or whether a professor of social work can teach medical and nursing students. Beyond knotty conceptual problems, the hurdles are also mechanistic and bureaucratic such as starting times for classes, course credit, and final examination schedules. Though difficult, significant educational change is occurring in the seven Community Partnerships.

Multidisciplinary Primary Care. Creating multidisciplinary models for the delivery of primary health care is fundamental to the achievement of the overall goal of redirecting the education of health professionals education toward primary care in communities. The underlying premise of the strategy is that such education is essentially a socialisation process - the means whereby students acquire their values and beliefs about themselves as professionals. Significant progress has been made. For example, the total number of academic, community-based primary care centres planned to be fully operational by the end of the grant period is 36. Thirteen academic primary care centres have students on site, and 59 academics will be recruited for the academic, community primary care settings.

However, more emphasis must be given to establishing multidisciplinary care models. A number of complex factors tend to interfere with the successful implementation of such models. First, most representatives of faculties of medicine and nursing know very little about multidisciplinary primary health care. Secondly, present health care financing mechanisms exert a bias against multidisciplinary primary care. Third, community health centres think they are already providing multidisciplinary primary health care, while in some respects they are not. Fourth, community health centres are too over - extended and underfunded to want to create multidisciplinary primary care models for education for which they see no immediate funding.

Research. Creating an academic dimension for the primary care centre requires major research programmes. This research is expected to build upon integrated conceptualisations of health that link biological, psychological, cultural, and social dimensions of health and illness. The kinds of questions researchers normally seek to answer are to a considerable extent shaped by the background of the researchers, the orientation of their colleagues toward promotion and tenure, the interests of the research funding agencies, and the nature of the settings in which the research occurs. A goal of the Community Partnerships is to have the research questions shaped by the communities and to have the research conducted by academics who are based at the primary care centres. This goal for the development of research will receive more attention in subsequent years.

Community/Institutional Governance Structure. A central element of the strategy in this initiative is for community partnerships to be created. These partnerships between educational institutions for the health professions and people in communities would be realised by establishing new organisational structures to govern the programmes. In effect, academic institutions and community health centres are expected to give away long held unilateral control over certain policy areas to an organisation whose governing body collectively represents the interests of all parties, particularly people in the communities. Impressive progress has been made in the creation of such organisational structures. A surprise has been the extent to which curricular and research issues are being put before the joint boards.

Allocation of Resources. Each institution allocated or reallocated additional resources for their Community Partnerships project. The range was from a low of $1.4 million to a high of $13 million, for an average of $4.2 million per project. Overall, more funds have been allocated than were expected. As of November 1992 the total allocation/reallocation of resources was projected to be over $40 million.

Strategies to Achieve Institutional Change. In selecting the seven Community Partnerships for funding, special attention was given to indicators of institutional capacity for significant change in the education of health professionals. Leadership in the partnerships is seen to be particularly necessary for success. The leadership of some of the projects is characterised by continuity from conceptualisation to implementation, and most likely, on into sustainability. That leadership provides the necessary consistency of vision, tempered control of that vision, and an ability to guide the transition. In a few instances the strengths of leadership in these dimensions need to be carefully monitored.

Supporting Strategies. Additional funds of $5.5 million were made available to help strengthen the projects and increase their national impact. A brief summary of progress to date on each of the supporting strategies is provided below.

- Leadership Development: Nine senior Fellows from academia, community, and the public sector started the new Kellogg Community Partnerships Leadership Development Programme beginning in September 1992. The goal is to prepare leaders for reforming health professions education toward primary health care.
- Evaluation: Data is being collected on the seven Partnerships to assess their impact on the number of primary care graduates; availability, access, and continuity of multidisciplinary primary health care; the effectiveness of the linkage between communities and academic institutions; and change in academic institutions.
- Networking: Support is being provided to strengthen project leadership and community involvement through national meetings.
- Informing Policymakers: The Community Partnerships are being assisted in communicating what they are doing and how it will affect health care reform positively in their communities. Newsletters are being published. An Executive Summary of the National Conference held in September 1991 was published and distributed. Contacts have been made to inform policymakers and organisations of health professions about the importance of multidisciplinary primary health care to meeting society's health care needs.

Informing Policymakers

No one expected the achievement of the Community Partnership goals to be easy. It is not. Many difficulties have been encountered. State government and local budgets are being cut. New governmental rules are being fashioned to control costs. Health insurance companies are trying to increase income and reduce costs. Health professionals are not satisfied with their jobs. Hospitals and specialists are upset by the criticism which they receive directly or indirectly. In this chaotic context, seven Community Partnerships are on the way to achieving fundamental educational reforms. In the long run, the Community Partnerships initiative of the Kellogg Foundation is an effort to inform policymaking. Significant funds must be made available at local, state, and national levels to assure the sustainability and expansion of the concept.

Through the Community Partnerships initiative, the Kellogg Foundation intends to help to create new programmes and inform policymakers about ways to improve education for primary health care. These efforts are informed by what is seen to be the nature of public policy formulation in the 1990s. They are also influenced by the long established programming philosophies of the Kellogg Foundation. Most particularly, the Foundation continues to have a grassroots community-based orientation - a scepticism about institutions and yet a profound belief that a partnership must be encouraged between communities and institutions, if solutions to our most pressing problems are to be found.

At least for the United States of the 1990s, the shaping of policy begins locally and moves back and forth through various democratic processes to affect change at state and federal levels. Built into the U.S. character, and thus its system, is an independent nature, a positive attitude toward the private sector, and a distrust of government intervention. Domestic policy solutions tend not to flow from Washington, the seat of government. Congress by its nature represents voters and interest groups, leading to the compromise and removal of the offending aspects of proposed programmes.

Policy making at the level of state governments is similar. State legislators are advocates for their constituents and, therefore, compromisers. They tend not to be initiators of new programmes and systems. It has always been that way. Leadership - the articulation of solutions for serious problems in our systems - usually comes from the executive branch of state and federal governments. However, such solutions are not cooked up in the back kitchens of policy makers in isolation. In most cases they come from outside the government.

One source of new programme ideas will be the foundations. In the case of the Kellogg Foundation, its funds help people shape responses to problems and from such responses will come public policy changes. The Community Partnerships initiative is an idea about the creation of academic, non-hospital community health centres. This idea was shaped in seven different ways, by people and institutions at the local level. In our view, public policymakers need ideas and positive suggestions to support, rather than to be against.

For the '90s the Kellogg Foundation will be what it has always been - committed to the belief that people who experience problems know best what solutions will work for them, and committed to the belief that systems change for the betterment of people, from the bottom up.

References

Kellogg Foundation Community Partnerships: A Kellogg Initiative in Health Professions Education. (1991). Battle Creek, MI: W.K. Kellogg Foundation.

Kaiser Foundation and Commonwealth Foundation Survey. (1992). Menlo Park, CA.

Kassebaum, D.G., & Szenas, P.L. (1992). Relationship between indebtedness and the specialty of graduating medical students. *Academic Medicine, 67,* (10), 700-707.

Levit, K.R., Lazenby, H.D. , Cowan, C.A., & Letsch, S.W. (1990). National Health Expenditures. *Health Care Financing Review, 13,* (1), 29-54.

National Association of State Budget Directors. *State Expenditure Report.* (1991). Washington, DC: National Association of State Budget Directors.

Annals of Community-Oriented Education
1993, Vol. 6, 231-242

Medical School Accreditation: The Australian Experience

John D. Hamilton
The University of Newcastle
New South Wales, Australia

Abstract

The author was invited to write about the accreditation process of the Australian Medical Council (AMC) from two perspectives. The first was as the Founding Chairman of the Accreditation Committee and also as Chairman of the first three of the five accreditation teams. The second was as Dean of the latest School to be accredited - in short as biter and bit.

Accreditation in Australia

The AMC accreditation has been described elsewhere (Hamilton et al., 1990). The AMC was established in 1985 with one of its major responsibilities "The accreditation of medical schools and of courses leading to basic medical qualifications" (Australian Medical Council, 1989). It does not deal with the internship but is aware of the need for continuity of experience.

For many years the General Medical Council (GMC) of the United Kingdom, undertook accreditation, so that graduates could register for practice in the United Kingdom. This was accepted as sufficient also for registration in Australia but was clearly a colonial tether that stood to prevent medical schools responding to the specific needs of Australia. Clearly Australia needed a system of its own.

The Accreditation Committee set up a broad framework and process of its own, but used the detailed guidelines of the GMC in the first instance for reasons of continuity and until AMC guidelines could be drawn up in their own right. To do this properly would require the benefit of wide consultation and experience in accreditation and, above all, the recommendations of a national review of medical education just then commencing under the Chairmanship of Professor Ralph Doherty.

The Doherty Report (Doherty, 1988) has been a particularly important basis for the new guidelines which were published in 1992 (Australian Medical Council, 1992).

The Process of Accreditation

We examined different systems of accreditation and chose as our model those of North

Requests for reprints should be sent to J. Hamilton, University of Newcastle, Faculty of Medicine, N.S.W. 2308, Australia.

America, namely the Liaison Committee on Medical Education (LMCE) of the USA and the Committee on Accreditation of Canadian Medical Schools (CACMS). We chose these because of the benefit of the internal review that their system required and because we wished the process to be one of consultation with immediate feedback, so that momentum for change and consultation was sustained.

Accreditation teams, each of four or five, are made up of academic clinicians, basic scientists, social scientists and deans. One in every team is an expert in community medicine which is recognised as an important and rapidly moving field in medical education and difficult to assess without specific expertise.

One year before the visit, a detailed request for information covering all aspects of the accreditation is sent to the Faculty. The scope of the accreditation is indicated conveniently by the list of chapters of the report to be written by the accreditation team.

Six months before the visit the Chairman and Secretary spend a day with the Faculty consulting with Committee Chairmen, hospital representatives and heads of disciplines (departments). The aim is to explain the scope and implication of accreditation and particularly that, without an accreditation in good standing, graduates cannot be registered.

In preparation for the visit, there are two documents of particular importance to prepare. These are "Strengths and Weaknesses" and "Future Plans and Priorities". The Faculty is asked to use the curriculum as its focus but to deal with all other related matters that will be covered in the framework of the report. This requires the Faculty to undertake an internal evaluation of itself. Some Faculties use external experts to assist. This evaluation is one of the most important aspects of accreditation, and one recommended by the Doherty Committee.

The Accreditation Visit

The team spends a week reviewing all aspects of the medical school with the undergraduate curriculum as the focus. The atmosphere has sufficient formality that relations are clear. There is for instance no evening entertainment. This to provide time for the Committee to consult and plan the next day's enquiries. A detailed plan of visits is agreed well ahead of time, but there is space for additional contacts. The atmosphere of the discussions is supportive and collegiate.

This leads to substantial consultation on issues faced by the medical school and a willingness to discuss them openly. The Committee recognizes that no school is free of problems; what they are looking for are coherent plans to address them. As far as possible the team also visits outlying hospitals, community centres, and the usual support systems of library, audiovisual aids unit, etc. Consultation with supervisors of the graduates gives an informal appraisal of the quality of graduates, a helpful indicator, albeit informal and subjective.

Table I. Table of contents, AMC accreditation report

I Introduction
- The Australian Medical Council
- Accreditation
- Visit Arrangements
- Appreciation
- The University
- The Faculty
- Current Issues in Medical Education (at Newcastle)

II Undergraduate Curriculum
- Undergraduate Programme Objectives
- Course and Subject Descriptions
- Contribution of Individual Disciplines to the Curriculum
- Teaching Methods
- Monitoring and Feedback
- Adaptation of Curriculum
- Student Opinion
- Servicing of Courses
- Curriculum Content, Balance and Integration

III Units Supporting the Curriculum
- The Disciplines of the Curriculum
- Anaesthesia/Intensive Care and Emergency Services, John Hunter Hospital
- Oncology Unit
- Library Facilities
- Laboratory and Teaching Facilities
- Medical Communication Unit
- Medical Informatics (Computing) Centre

IV Hospitals and Logistics

V Student Assessment and Examination

VI Student Selection, Admission and Progression

VII Quality of Graduates

VIII Academic Staff

IX Research and Education

X Funding

XI Conclusions and Recommendations

The Report

The team decides the main points of its report and recommendations in time for presentation on the final day. This is required to force the team to come to its own conclusions and test them in day-by-day enquiry. It also means that there is immediate feedback. In the past this was not available from the GMC on its external visit, so that when the report finally did appear many months later it had largely lost its impact. The main points are relayed first to the Dean and senior Faculty officers and then to the Vice-Chancellor who is ultimately responsible for the medical school. In the first instance we used to indicate the recommendation for the period of accreditation there and then, but latterly the Council has chosen to reserve that right to itself when it receives the final report. A draft report is sent to the Faculty for comment on matters of fact, and the Accreditation Committee reviews the penultimate draft before referral to Council.

A View from the Receiving End

The accreditation for the Faculty of Medicine, University of Newcastle, N.S.W. was in September 1992, and one year previously we were already attending to the information required. As intended by the AMC, this preparation provided an excellent stimulus to complete work that had long been needed, in particular, in our case the definition of Discipline Maps for each academic discipline and a detailed description of every part of the curriculum. Our curriculum is of a different structure to the usual, with full integration and no separate departmental courses. Learning is through five Domains of learning (Hamilton, 1992), and disciplines have no exclusive ownership of any part of the course. We recognised that it would be particularly important to make a clear presentation of structure and method of our curriculum, because problem-based learning through small tutorial groups, substantial learner independence, full integration between basic and clinical sciences, and a strong emphasis on critical reasoning and population medicine would all be relatively unfamiliar to the visiting team. Our Discipline Maps were important, not only for our own purposes, but also to reassure the team that the content of the usual disciplines were indeed being covered, albeit in a different structure.

Similarly our administrative organisation is different, designed to support an integrated curriculum governed by a single undergraduate education committee and supported as a whole by an Undergraduate Education Unit, Medical Communication Unit, Computer Unit, and Biomedical Libraries.

The AMC "supports diversity in teaching approaches provided schools evaluate their own approach" we realised we would have to justify our structure and demonstrate its effectiveness. Mock interviews with Disciplines and Domain Committees proved in some cases to be salutary; they showed that things were not in as good a shape as they should be and provided an opportunity to deal with them.

The two key documents referred to above challenged the Faculty to define its own achievements and priorities. We understood that they would form an important basis for discussion and every member of the Faculty had to be aware of and in support of the documents. The AMC is willing to accept any rational approach in method or structure but it requires that the School can demonstrate that it not only has the resources, but also the academic organisation and the quality of staff to fulfil its stated objectives. The School is, in effect, being weighed in its own balance. Studies of outcomes and of student admissions and of systems of monitoring and evaluation were all sought and, in our case, were welcomed by the team as distinctive and, to a large degree, unique in Australia.

My personal perception was that the visiting team struggled more than I had expected to understand the structure and method of our curriculum. As usual they gained most by discussion with staff who were involved closely with implementation and with students. They came, I think, expecting to be critical of our lack of departments and of the burden of responsibility that might be carried by relatively junior academics. They were reassured on both scores by the vast majority of our colleagues, particularly the junior academics about whom they had concern. Instead of complaint, they heard a welcome to the challenge, independence, and interdisciplinary links that the curriculum and the faculty structure provided. Students, often the best barometers of a programme, explained their concerns which were known to us. Particularl mention was made of the added stress of an open-ended curriculum, matched by what they sensed to be some unpredictability in the assessments. To a degree these aspects are an inevitable consequence of the type of programme we run and they build the independence in learning for which our students are noted. But they, and we too, are also aware of the *mea culpa* of any programme that is when we do not do what we aspire to do. Almost any programme will fail if principles and practice are not carried forward with skill and commitment. But despite these concerns, the students who met with the team defended robustly the philosophy, spirit, and breadth of the programme and the distinctive student selection that provide the benefit of a heterogenous body of students who could learn much more from each other in tutorials than if they had all been exactly the same. Clinical supervisors commended the quality of our graduates, and it was fairly clear early in the week that the team was growing in appreciation of the achievements of the programme.

The summary and recommendations of their final report give their views in balance and it is worth quoting the major part in its entirety.

"Conclusions and Recommendations
The guidelines of the Australian Medical Council support the concept of a variety of approaches to medical education. Providing the objectives of the medical school are broadly consistent with those laid down in the guidelines of the AMC, the medical school is assessed by its ability to achieve its stated objectives, rather than by detailed adherence to a set curriculum. The AMC has recognised the value of diversity in medical education

and feels that there are considerable benefits if universities are encouraged to develop innovative approaches to curricular design and educational techniques. It is inevitable that such approaches will have some disadvantages as well as benefits. However, the process of establishing a new curriculum with the attendant emphasis on the overall aims of the educational process will in itself create vigorous involvement of a wide range of staff in discussion and implementation of educational principles. The Newcastle Medical School has the most innovative undergraduate curriculum in Australia, and has acted as a catalyst to produce a degree of analysis and reorientation in the older schools. The AMC therefore undertook its assessment against a background of recognising an influence of the Newcastle Medical School which extends beyond the education of its own students.

The assessment team identified a number of important strengths of the Medical School which should be the source of considerable pride to all those associated with it. These will be briefly outlined.

The vertically integrated and problem-based nature of the curriculum has undoubted benefits. The relevance of the basic science material is apparent to the students and the early clinical contact stimulates their interest and enthusiasm. The modifications made to the curriculum in the mid 1980's have addressed the problem of the students lacking an appreciation of the broad principles and recent developments in the basic sciences, although they have also led to the introduction of a considerable amount of didactic teaching (albeit interactive).

The present combination of self-directed, problem-based learning and didactic instruction is appreciated by the students and is regarded as appropriate. The creation of discipline maps, domain maps and strand maps has allowed the Faculty to document how completely areas which are considered important are covered in the integrated curriculum. Potential problem areas such as ethics, nutrition, preventive medicine and population health care are well covered.

The most important component of any medical school is its teaching staff. The assessment team was very impressed by the obvious enthusiasm and talent of a large proportion of people involved in the teaching programme. This was particularly impressive given the heavy demands placed on a relatively small core faculty by an intensive teaching and tutorial programme, and in many cases an additional administrative or coordinating role. The Faculty is fortunate to have recruited a number of fresh, young academic staff to complement or replace those present in the early days of the school.

The academic is well supported by a large and very capable educational infrastructure. The Undergraduate Education Unit including the Supervisor of Student Clinical Attachments, and the librarians at the various branches of the Gardiner Library, the University Library and the Mental Health Services Library are particularly impressive and a major resource for the Faculty.

The breadth of involvement of the academic staff in the administrative structure of the

Faculty is considered a major strength. Apart from the skills they bring to their roles, this has led to a general commitment to the philosophy of the Medical School. The willingness of so many to take on these roles is a major tribute to the leadership of the Faculty and reflects the pride that most feel in their School. The lack of departmental structure probably contributes to this loyalty to the Faculty as a whole.

The hospital resources available to the Faculty are extensive and varied. In addition to the John Hunter Hospital and the Mater Hospital in Newcastle, access to the Gosford Hospital, the Belmont Hospital and a range of country hospitals provides a large number of general, obstetric and paediatric patients giving excellent clinical experience. Particularly notable is the arrangement established with the Lingard Private Hospital for interviewing skills in Year 1 and psychiatry placements in Year 5. This hospital provided a particularly supportive environment.

The integration of the Medical School with the Area Health Service has allowed academic staff to play leadership roles in health care development in the area. This has provided an excellent and positive environment for undergraduate education. The recent problems with budget overruns and the dismissal of the Area Health Service Board appear to have been largely resolved and a constructive relationship between the Area Health Service and the Medical School has resumed. However, there will be some uncertainty until strategic priorities are decided and confirmed by the new Area Health Board. Combined support for research by the Area and its hospitals is essential to the health of the Medical School and its affiliated staff.

The Faculty has a very strong research performance, considering its size. In addition to the high quality of the academic staff, the liaisons facilitated by the integrated nature of the curriculum and the lack of departmental boundaries contribute to the high standard of the research. There is an impressive level of external grant support.

The Medical School overall enjoys a good relationship with the local medical community. This expresses itself in the general willingness of the visiting medical officers, the staff specialists and the general practitioners to contribute to teaching. However, this willingness should not be taken for granted and it is important for the Medical School to maintain, through its heads of discipline, excellent communication with and strong encouragement of these practitioners.

The medical School also enjoys broad community support. This expresses itself very clearly through financial contributions through public appeal, and the creation of the Chair in Cancer Research as the result of an appeal through the local television station is particularly impressive.
The University is both proud and supportive of its Medical School. Continued strong support is essential if its high standard of performance is to be maintained.

As far as could be ascertained, the Medical School produces graduates of high standard. The School has been particularly active in attempting to evaluate the quality of its graduates, and although comparisons are difficult, the Newcastle graduates certainly do not appear to suffer by comparison with those of the other New South Wales medical schools. Hospital staff consistently reported satisfaction with the performance of Newcastle graduates as interns and residents."

The Report went on to identify a number of areas of vulnerability or deficiency for the benefit of the University and the Medical School for the future.

These included:

1. The curriculum was vulnerable to funding cuts or extra teaching loads, given the intensive nature of interaction and the small size of the School which had to carry senior professorial staff in multiple disciplines.
2. The functional isolation of the Faculty, as the result of its integrated curriculum, had hazards for long term research links and access to PhD students (this is being attended to with a plan of cooperation, particularly with Science and Mathematics).
3. Self-directed learning and the related unpredictable call upon certain staff has put some under particular stress.
4. A concern that, while we were strongly community-oriented, our community base for learning should be developed further. It was noted that a Chair in General Practice had been established. This matter is examined in a companion article in these Annals (Hamilton, 1993).
5. Specific deficiencies in organ imaging.
6. In some settings poor experience in psychiatry, as was pointed out by the Discipline of Psychiatry (this is subject to positive action with substantial leadership from the Faculty).
7. There were few practical classes, considered a disadvantage.
8. We were on multiple sites. This is the legacy of history and requires particular attention to timetabling to ameliorate its impact.
9. We were considered to be ambivalent on the issue of honours. This is an interesting point because originally the assessment system was set up without grades to avoid destructive competition within tutorials. Soon it became obvious that for the most favoured internship placements (and to satisfy some vanity or sense of challenge) an honours system might be introduced, although it was very controversial. I think the team read our ambivalence correctly.
10. Our closely integrated curriculum made it difficult for students to find an exit path to an alternative career. This is now being explored through the creation of a Bachelor of Medical Science by Coursework as an alternative career route.

The Report finished as follows:

"In summary, the overall impression of the assessment team was positive. The course at

Newcastle has a number of unique qualities and it has made a major contribution to medical education in Australia and in the world. In addition, it has greatly enhanced health care delivery throughout the Hunter Region. The School is well served by strong and dedicated leadership and outstanding academic staff. There are some areas of vulnerability and some weaknesses which the School should continue to address. The School and the University are congratulated on their considerable achievements to date and encouraged to continue their innovation and development."

The Result of the Review

Clearly it was gratifying to have such a positive review and for our documentation to be so commended. Indeed the Dean of the next school in line has borrowed it in its entirety as a model, at least for style if not content. Many of the points made by the team had also been made by ourselves. Particularly, we were aware of the need to strengthen the community experience within the curriculum.

In a sense the Newcastle curriculum has come of age and this accreditation has endorsed that. There is substantial reform and revision of curricula in Australia, and the AMC accreditation has contributed to that, as has the Doherty Committee. Three schools are now planning to move to a graduate programme, following the North American model. In each case they are following many of our substantive themes in the curriculum or student selection, and we have indeed fulfilled our major mandate to be an innovator of medical education for Australia. Perhaps our biggest challenge now is to continue to be innovative and to follow new lines in the light of our present experience.

Reflection

The team also learnt a lot. One experienced Dean (and one whose school was going to a graduate programme) said: "I have read all there is about Newcastle but this is the first time I have really understood exactly what you do." That comment highlights a particularly valuable role of the entire process of accreditation - that senior academics and Deans consult extensively on each other's programmes and, therefore, become intimately familiar with method, content and outcome.

This, together with a close contact with the Committee of Deans, has created an awareness of issues in medical education, not only in the curriculum but also in relation to the role of research, the links to health services, to the community, to the University, and Government. Cross-links with the postgraduate Royal Colleges and postgraduate councils have built the framework for closer coordination between successive stages of medical education. The emphasis on research in all disciplines has clarified its critical role in staff development, curriculum revision and the development of rigorous patterns of thought, critical reasoning and a capacity to continue to learn and to evaluate new experiences. Flexner would have been pleased.

There is no doubt that the process is taken seriously. Each school has committed substantial effort in preparation. The first accreditation visit, which I chaired, gave only a limited accreditation because of a number of major problems that were identified but were not being attended to. Paradoxically, many in the medical school welcomed this as a springboard for improvement, and indeed there were improvements and a substantial address to previously neglected problems. At a return visit the accreditation was extended to the full ten years.

It is, of course, always the case that a school is itself much more aware of its weak points than any external team might be. We ourselves could have written a more acerbic report about ourselves, but that is not the point. The report does more than criticise, it identifies and analyses a programme from an external perspective. In some cases these reports have proved to be valuable documents in their own right as direction finders for a medical school. Taken as a whole, successive documents provide an excellent and systematic analysis of the state and progress of medical education across the country.

The 1992 AMC Guidelines

The AMC has very recently published its new guidelines built on the experience of the past and informed, in particular, by the Doherty report. Professor Richard Larkins was a member of the Doherty Committee and also has close involvement with the Royal College of Physicians. This has made him the ideal person to succeed as Chairman of the Accreditation Committee and he was also Chairman of the Newcastle team (just as I was for the team which accredited his own University of Melbourne).

This does raise one point - is the system a closed shop? I do not think it is, for the issues are addressed openly and professionally. We had wondered whether the system would be improved by including non-medical and non-academic community members in the teams. However, for the time being we did not wish to disturb a system that appeared to be working well.

The new AMC guidelines need to be taken as a whole but some points are likely to be of special interest to readers of this Journal who are committed to innovation and community-orientation. The recommendations are all indicative rather than prescriptive. They deal with knowledge, skills and attitude, but the tenor is best caught by the following quotations from the general comments.

> *"It is apparent from the outline of the objectives and from the foregoing that the AMC supports the development of curricula aimed at stimulating scientific enquiry, developing analytical ability, and nurturing and encouraging appropriate attitudes. Such curricula would tend to emphasize active participation of students in the education process through self-directed learning and opportunities for studying certain areas in greater depth through optional or elective units, and exposure to a wide range of cultural, institutional and community experiences."*

> *"Although the diagnosis and management of the sick is a central function of the medical profession, it is also essential that the students acquire appropriate knowledge, skills and*

attitudes relating to disease prevention, health promotion and public health medicine. These areas have been under-emphasized in the past."

The AMC does not wish to be more prescriptive with respect to the educational methods of each medical school as it encourages innovative approaches. Each medical school should set in place a curriculum capable of achieving the objectives together with processes for recruitment and retention of appropriate staff, provision of suitable facilities, a system of assessment which tests the required knowledge, skill and, where possible, attitudes, a system of monitoring the effectiveness of the curriculum and an ability to modify the curriculum or its implementation according to the outcome of the monitoring process."

"In accord with the recommendation of the Doherty Committee, the Council will support medical schools which attempt innovate approaches. It is important that the methods used in the process of selection are clearly defined, consistent, defensible and, except in the case of explicite and deliberate affirmative action in favour of nominated disadvantaged groups, free of discrimination or bias. Moreover, appropriate follow-up should be conducted to allow the selection method to be refined, modified or abandoned."

"In view of the different rate of maturation of different individuals, and the benefits to the student body as a whole of diversity and heterogeneity of experience, pathways for entry to the course of older students and those from other careers or courses should exist."

"The curriculum should encourage the personal growth and development of breadth and perspective in the student, rather than being focused too narrowly on vocational training. Elective periods, self-directed learning, discussions in small tutorial groups, advanced study units in optional areas and intercalated years of research or work experience in Australia, New Zealand or overseas countries can help to develop this breadth."

"Although, as stated earlier, the AMC has no wish to impose specific curricula or to prescribe details of administrative structure, it does expect medical schools to be able to demonstrate that they have processes in place which allow the overall content and balance of the curriculum to be defined in relation to the explicit objectives of the medical school, and for them to be able to demonstrate that they are able to implement and change the curriculum according to these overall requirements rather than in response to the power or influence of specific interest groups."

"It is important that medical schools place appropriate emphasis on a population health approach to the care of communities and they should have processes in place to ensure that students have adequate experience of community facilities available for meeting specific needs for health education and disease prevention. The specific health needs of both men and women, the needs of those with chronic disabilities, and those from

> *particularly socio-economically disadvantaged cultural groups including Australian Aborigines and Torres Strait Islanders, and certain migrant groups must be addressed."*
>
> *"...the AMC strongly commends any innovations in educational techniques which encourage active student enquiry and stimulate analytical skills and organisation of information and knowledge."*
>
> *"The AMC believes that undergraduate medical education cannot be dissociated from an environment which encourages research, and in which research is actively pursued. It considers that such an environment is required to engender the pattern of scientific thought and critical appraisal which should underlie medical practice, and to provide students with the opportunity of experience in medical research. Research activity is also considered necessary to attract a high calibre teaching staff, and research productivity enhances the morale of the teaching staff."*
>
> *"The quality of each medical school will ultimately be judged by the on-going ability of its graduates to perform at a high level in the changing roles the community requires of its medical practitioners over their professional careers. This requires a flexibility of approach and a commitment to a life time of self-directed learning."*

Conclusion

The accreditation process has proved to be an effective agent in stimulating and reforming medical education. The experience for each School is positive - salutory but constructive. The AMC guidelines in their content and tone provide the academic and professional environ for continuing and responsive reform in the interests of a better health for Australia.

References

Australian Medical Council. (1989). *Constitution.* Canberra, Australia: Australian Medical Council.

Australian Medical Council. (1992). *The assessment and accreditation of medical schools by the Australian Medical Council.* Canberra, Australia: Australian Medical Council.

Doberty, R.L. (Chariman) (1988). Australian medical education and workforce into the 21st century. Canberra, Australia: Australian Government Publishing Service

Hamilton, J.D. & Vandewerdt, J.M. (1990). The accreditation of undergraduate medical education in Australia. *The Medical Journal of Australia, 153,* 541-545.

Hamilton, J.D. (1992). A community and population-oriented medical school: Newcastle Australia. In: K.L. White, & J.E. Connelly (Eds.). *The medical school's mission and the population's health.* New York, NY: Springer Verlag.

Hamilton, J.D. (1993). Community orientation: Ups and downs at Newcastle, N.S.W. *Annals of Community-Oriented Education, Vol. 6,*, 35-42. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Annals of Community-Oriented Education
1993, Vol. 6, 243-249

RESOURCES

Educational Materials for Health Workers at Low Cost: The PAHO Expanded Textbook and Instructional Materials Programme (PALTEX)

Richard Marks and Carlos Vidal
Pan American Health Organization
Washington, DC, United States of America

Abstract

Since 1968 the Pan American Health Organization has been involved in the active distribution of low cost books, video tapes and instruments for the education of health professionals in Latin America. This paper describes the methods, organisation and financial arrangement.

History

The education and training of health workers has always had a high priority for the Pan American Health Organization, as well as the World Health Organization. In addition to a concern with training programme development and educational methodology, PAHO has had a long-term interest in the preparation and provision of instructional materials for health personnel. PAHO efforts in this area date from the 1960s, when a lack of access to high-quality textbooks for Latin American undergraduate medical students was identified as a serious impediment to the training of physicians.

A study carried out in 1965 under PAHO auspices by a group of Latin American teachers determined that relatively few high-quality medical textbooks were available in Spanish, and those that were had prices beyond the reach of many potential users. Thus, medical students had not developed the habit of buying and using textbooks as a matter of course; rather, they tended to depend on lecture notes compiled and sold by teachers. When sold by students they not infrequently contained inaccuracies. Class time tended to be taken up with expositions of theoretical material which could be learned independently if students had easy access to books. This left little time for active student participation or presentation of the latest technical knowledge.

The answer to the problem, developed by PAHO in consultation with its member governments and the universities of the region, was to create the Medical Textbook Program, a mechanism to provide high-quality instructional materials at prices which would represent a real incentive for students to use them. First implemented in 1968, the

Requests for reprints should be sent to R. Marks, Pan American Health Organization, Health Manpower Program, Washington, D.C. 20037-2895, United States of America.

basic scheme involves centralised book purchase in bulk by PAHO, thus obtaining significant discounts from publishers; use of PAHO's Headquarters and country field office infrastructure for assistance in shipping and financial managements; and administration of sales by the universities without charge to the programme.

Today's programme, now known as the Expanded Textbook and Instructional Materials Program or "PALTEX", serves the needs of a wide range of professional health disciplines, including medicine, nursing, dentistry, veterinary medicine, nutrition and environmental health. It provides not only print materials, but also video tapes and basic diagnostic instruments required for hands-on student practice.

With PAHO/WHO's current emphasis on primary health care (PHC) as its major strategy, PALTEX now publishes and distributes manuals and other materials focused on the needs of health services personnel at all levels of the health system, ranging from community promoters to senior staff responsible for programme design and implementation. PALTEX is also beginning to meet the urgent need for constant updating and improvement of health workers' skills by providing materials especially designed for programmes of continuing education.

Selection of Materials

Among the criteria for selecting materials for distribution through PALTEX are high technical and instructional quality, consonance with PAHO programme priorities and user demand sufficient to justify production of economical quantities. Periodically, PAHO carries out a formal evaluation process in professional areas such as medicine, nursing, dentistry, veterinary medicine, public health, environmental health and nutrition, with a view to determining the need for instructional materials. The process begins with a questionnaire sent to all schools of a given profession throughout Latin America, in order to collect information on enrollment, curricula, course content, teaching methodology, need for special materials, and textbook preferences. The results are analysed and made available to groups of distinguished teachers who serve as members of PALTEX Selection Committees. These groups meet for a one-week discussion of innovative teaching concepts and recommend books and other materials for inclusion in PALTEX. Their conclusions are published for the information and use of other institutions throughout the region.

Since cost considerations make it difficult to convene selection committees except at relatively long intervals, the PALTEX book list is kept up to date, and new materials are introduced on a continuing basis through a process of consultation coordinated by the responsible PAHO technical unit, the Health Manpower Program (HSM). Manuscripts or published materials, submitted by authors, publishers, and government agencies or other institutions, are reviewed initially by HSM staff and, if necessary, sent for a second opinion to PAHO specialised staff at Headquarters or in the field, or to selected experts in Latin

American universities or health services. PAHO technical units sometimes initiate the preparation of materials in coordination with HSM. In such cases, the actual writing is done by PAHO staff or other experts chosen for their knowledge of the manpower training needs of the region

Each year several national coordination meetings are held in selected countries as a supplement to the activities described above.. The staff responsible for local PALTEX administration at the participating institutions in the country are invited to share ideas on how to improve the Program and to supply feedback on the materials provided. This also gives teachers an opportunity to compare notes on the use of materials in the curriculum.

Materials Currently Available

A fairly broad range of instructional materials are currently available through PALTEX (Table I). Health sciences textbooks for undergraduates continue to be provided. While translations of such works as Harrison's *Principals of Internal Medicine* and Nelson's *Paediatrics* make up a substantial proportion of the sales, PALTEX has given special priority to the distribution of books by Latin American authors in the interest of promoting appropriate technology and fostering national, intellectual and scientific development. One example is a series of introductory manuals in the major medical specialties published by a research institution in Colombia for young physicians during their year of public service. In most subject areas, the Program is now able to offer students a choice between translations and original texts by Latin American authors.

Given PAHO's current Program of Work and Strategic Orientations, PALTEX emphasizes materials incorporating the PHC strategy. The *PALTEX Series for Mid-level Technicians and Auxiliaries* consists of practical manuals for front-line health workers, including management of acute respiratory infection (ARI), care of mothers and infants, basic surgery in PHC, community health education, principles of epidemiology for disease control, basic laboratory techniques. Where possible, the Program tries to keep the prices of the manuals below the equivalent in local currency of US$ 5.00.

The Program also publishes the *PALTEX Series for Health Program Managers*, a collection of manuals for in-service training of professionals responsible for project planning and execution. The texts cover social aspects of health and planning of community health programmes. Among the areas included are community health research methodology; design and execution of community control programmes in hypertension, diabetes, diarrhoeal disease, uterine cancer, ARI and HIV; child growth and development; adolescent medicine; and special aspects of epidemiology in PHC. In addition to these two series, PALTEX also seeks out and distributes materials of public health interest written and/or published by other sources. Efforts are being made to decentralise some publishing initiatives to the level of the PAHO field offices, with a view to establishing national publishing programmes.

Table I. Items available by subject area (as of December 1992)

Health administration	7
Basic sciences	19
Preventive/social medicine	12
Manuals for residents	19
Clinical medicine	36
Pathology	8
Nutrition	3
Nursing	24
Dentistry	17
Environmental Health	4
Veterinary medicine	19
Primary health care:	
PALTEX/technicians/auxiliaries	17
PALTEX/programme managers	27
Other	16
Instruments	21
TOTAL	231

PALTEX also includes non-print materials. Basic diagnostic and dental instruments are available, such as stethoscopes, sphygmomanometers, oto-ophthalmoscopes, basic surgery kits, dental hand pieces and other hand instruments. Video tapes in Spanish for teaching physical examination techniques may be obtained on special order.

How the Programme Operates

PALTEX is a collaborative effort of several counterpart agencies: PAHO, the Pan American Health and Education Foundation-(PAHEF). See Financing below), PAHO member governments, publishing houses, and the universities and other institutions which train or employ health workers.

PAHO obtains the selected materials in bulk, either by direct purchase from publishers (as in the case of textbooks which have already been published in or translated into Spanish or Portuguese), by producing its own copies under licence, by translation rights agreements, or by developing and publishing its own original materials. The average print run is about 3,000 copies, sufficient to cover sales for one to three years.

Production sites vary, depending on prevailing costs and the needs of editorial coordination. Most textbooks from commercial publishers are purchased in Mexico and Argentina, while materials published directly by PALTEX are generally printed in the United States. The materials are stored, and bulk shipments are made to the PAHO field offices in each country to economise on shipping costs and to have the materials available for redistribution in accordance with the needs of the participating institutions.

PALTEX relies on the existing PAHO administrative framework for clearing international shipments of materials and for handling the proceeds from sales. While the Program must have hard currency for payments to suppliers, it would be cumbersome and sometimes impossible to expect users to pay in dollars. Consequently, PAHO accepts payment in the local currency of each country, and credits PALTEX an equivalent amount of US dollars at prevailing rates of exchange, using the local currency to meet normal field office operating expenses. This requires close attention to rates of devaluation in some countries. PAHO field office staff also keep in touch with the local network of participating institutions to distribute PALTEX materials and ensure timely collection.

The PAHO member governments cooperate by signing basic agreements with PAHO permitting PALTEX operation in each country. The materials are exempt from all national taxes, including customs duties, and the governments participate with PAHO in the evaluation of programme activities.

Publishing houses see PALTEX as a major alternate channel of distribution for their books. There is evidence that sales through normal commercial channels are essentially unaffected, when an existing title is incorporated in PALTEX, so that the additional bulk sales to PALTEX represent income which would not otherwise be available. Houses which publish works by Latin American authors have been especially pleased with the additional international coverage that the Program gives to their publications.

Two mechanisms for participation are available to interested institutions: direct purchase, or sales on consignment. In the first, the institution simply pays for the materials upon receipt according to terms of sale established by PAHO; special quantity discounts are sometimes available. The second option requires the signing of a Memorandum of Understanding with PAHO in which the institution agrees to receive and sell stocks of materials on consignment, assuming the cost and responsibility of the local sales operation. This involves:

- Appointment of a part-time faculty coordinator to cooperate with PAHO in analysing the suitability of the materials provided and the need for new ones, to ensure that students and teachers are aware of the materials, and to help determine the stock needed by the institution to cover each year's sales.
- Appointment of a part-time clerk to handle local PALTEX administration through a simplified, standardised system, including requesting the materials from PAHO,

reception of shipments, stock maintenance, selling the materials at prices established by PAHO, record-keeping, preparation of monthly sales and inventory reports, and forwarding the proceeds in local currency to PAHO.

Although most participating institutions are university faculties of health sciences, PALTEX also includes government agencies and a variety of other nonprofit organisations which train or employ health workers, such as hospitals, NGOs and local health services. Commercial bookstores are welcome to make bulk purchases, but only of items for which PAHO holds the copyright.

Benefits Offered by PALTEX

PALTEX serves its participating institutions by providing an opportunity for their students, teachers, and other health workers in training or in service to purchase textbooks and other instructional materials at about half the normal commercial price. Furthermore, it publishes materials at low cost in aspects of primary health care which commercial publishers in Latin America have not yet begun to cover adequately. Students and health workers gain access to books of region-wide interest and usefulness by Latin American authors which they might not otherwise have been able to obtain in their own countries.

Participation in PALTEX also permits institutions to take part in the continuing analysis and refinement of curricula and teaching methodology which the selection process involves. It gives school and other health services personnel an opportunity to exchange ideas with their counterparts and to help create the kinds of educational materials they feel would be most suitable for local conditions.

Financing

PAHO, PAHEF and the participating institutions have all played an important role in support of PALTEX. The operations are financed by a revolving fund created by PAHEF, a US-based nonprofit foundation which cooperates closely with PAHO in a number of activities.

In this case, PAHEF acts as recipient for two loans from the Inter-American Development Bank. The first ($2 million) was made in 1971 for the purchase of textbooks for medical students. The second, made in 1979, provided $5 million to expand the Program to other disciplines and types of materials and to health workers in general.

By agreement with PAHEF and the Bank, PAHO has made a major investment in the Program, providing payments of $600,000 over a five-year period from 1971 to 1976 and $2 million during the ten years from 1979 to 1989 for the Medical and Expanded Programs respectively, in order to help maintain extra-low prices to the users. PAHO is also making an additional contribution of $2 million over a 20 year period (to end in 1996) to defray the cost of principal payments on the first loan. However, PALTEX must generate the revenues needed to meet the principal payments (as well as interest charges) on the second loan from sales proceeds. PAHO continues to provide a small annual subsidy to cover part of the costs of field operations.

A major share of the cost of administering PALTEX is born by the participating institutions in the form of the services of part-time staff who actually sell the materials to the final purchaser. Although the two loans and the PAHO subsidies have permitted PALTEX to establish a solid financial base, its existence depends on continued voluntary support from the participating training and service institutions, as well as on receiving sufficient sales income each year to cover the cost of acquiring materials and conducting the sales operations at the regional level.

In 1991, PALTEX unit sales were 204,726 (Table II), representing total gross revenue of about US$4.1 million. This income was sufficient to meet Program expenses, including the cost of the goods sold and the costs of operation. The latter category consists of the salaries of the PAHO staff assigned to the Program at Headquarters and in the field, shipping expenses, travel, promotion, lost and damaged stock, nominal honoraria for university staff, interest charges, and principal payments on the second loan. The Program also received income from funds invested, as well as the above PAHO payments toward field operating costs and principal payments on the first loan.

Table II. 1991 sales (in units)

Medical	45,722
Basic sciences	26,776
Primary health care	56,586
Nursing	12,610
Dentistry	5,975
Veterinary medicine	8,963
Instruments	47,311
Other areas	783
TOTAL	204,726

Over the past 24 years, the Program has provided nearly 2.5 million books and instruments to students and health workers at over 500 institutions in 19 Latin American countries. It is an example of a creative mechanism of collaboration in the management and transmission of knowledge in health, involving international organisations, national and local governments, and the private sector.

Annals of Community-Oriented Education
1993, Vol. 6, 251-258

Teaching Aids at Low Cost: A Non-Governmental Organisation

David Morley
TALC
Herts, United Kingdom

Abstract

TALC is a non-profit making organisation which supplies teaching aids and books at low cost to raise standards of health care world-wide. It is professionally advised by the Centre for International Child Health, The Institute of Child Health, University of London.

TALC was started by the author in 1964 because postgraduate students kept asking for slides to use as teaching aids when they returned to their own countries. It was tedious and time consuming to sort out slides, and so four sets of 24 slides were put together and made available with a script describing each one and costing £0.30 ($0.50). These sets still cost only £3.80 ($ 6) which is less than it costs to buy and process a single film.

During the intervening 27 years TALC has distributed five and a half million slides, which is perhaps the best evidence that it fulfills a need. Early in the 1970's the need to provide books became clear, and the requests for these now exceed in value the requests for slides. Some 80,000 books are now distributed each year, in addition to the Strategies for Hope Series which deals with AIDS problems. The growth of TALC is due to emphasis on low cost, but at the same time on as high a standard of material as possible.

Sets of Slides with Scripts

All new sets of slides are very carefully selected and, thanks to the work of Dr. Felicity Savage, the scripts are very carefully produced with line drawings and written in plain language, appropriate to those for whom English is a second language.

A question and answer technique is used. In this way the teacher is encouraged to make sure that the students study the slides and come to appreciate the points made in the text. The scripts are designed to give teachers ideas, so that they can try out new methods and perhaps improve their teaching skills.

In Europe and North America video tapes in cassettes are often preferred to slides, but unfortunately video tape is not as versatile for teaching. The teacher is in fact handing over his audience to the director of the video, and opportunities to spend time on specific images, as can be done with slides, are very much more difficult.

After ten years of growth we realised the potential value of a logo and asked our home workers for ideas. Mrs. Joan Lund came up with a proposal (Fig. 1.) which is now recognised worldwide and is found on the jacket of a number of books TALC has supported.

Requests for reprints should be sent to D. Morley, Emeritus Professor, TALC, P.O. Box 49, St. Albans, Herts AL1 4AX, United Kingdom.

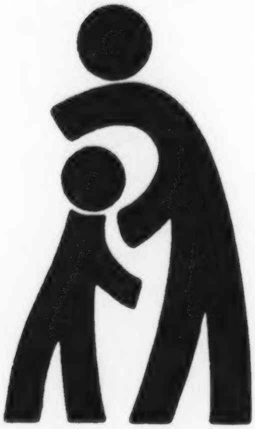


Figure 1. The TALC Logo

Slides and Flannelgraphs on AIDS

In the mid 1980s, when the severity of the AIDS epidemic became apparent, TALC saw that it had a particular responsibility to make available teaching material on this subject. With the expert help of Dr. Wendy Holmes, who had up-to-date experience of working with AIDS infected children and adults in Zimbabwe, a total of four sets of slides on AIDS has been produced, and these are the most widely used visual material in Africa. To date a total of 10,200 sets on AIDS, or over a quarter of a million slides have been sold by TALC. There is also a need to prepare similar material for doctors and other health workers in Asia who are beginning to meet with AIDS. Sets appropriate to Asian communities will be developed and distributed for that continent by TALC and through other organisations who have more local contacts.

TALC also distributes a Family Planning Sexually Transmitted Disease, and AIDS flannelgraph. This is an excellent method of teaching at village level, as it can be adopted to suit local cultures.

Books

In 1973, the author wrote, and decided to distribute through TALC, a book called "Paediatric Priorities in the Developing World". This set out his experiences of child health services in developing countries. As a result, it became apparent that there was a considerable need in developing countries for low cost books, and TALC decided to market books as well as slides. Since then TALC has distributed a wide range of books. Very often the cost of production has been subsidised, and in this way the publisher is prepared to offer them at a reduced price.

While most of the books are concerned with primary health care, there have been notable exceptions. Perhaps the most important are the books on surgery by Maurice King. These are large A4 sized books, one on trauma and the other on non-traumatic surgery. The costs for the two books is £ 17.50, for which the purchaser receives over 1,000 pages of excellent and well illustrated text (Fig. 2.). A similar sized book when sold in a book shop, could cost £ 150 (US $ 210).

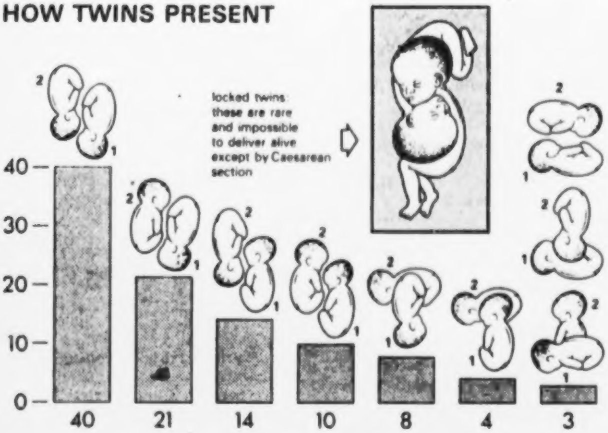
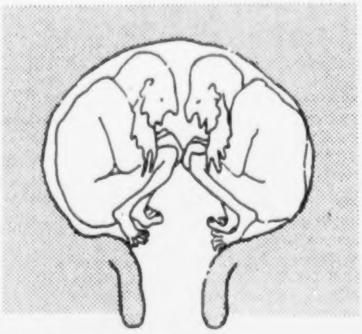


Fig. 19-7 HOW TWINS PRESENT. In 40% of cases both twins are cephalic. In 21% the second twin is a breech. In 14% the first twin is a breech. In 10% of cases both twins are breeches. In all remaining cases one or other twin, or occasionally both, are transverse.



'After you.' 'No, after you'

Figure 2. This is an example of the numerous illustrations from Maurice King's book on Primary Surgery Volume I. TALC has always placed great emphasis on the educational value of line drawings. These are to be found in most of our books, as well as in the scripts that go with many of the slide sets. (Reproduced with permission from OUP)

The books are appropriate for surgeons who may meet a wide variety of surgical problems in their district hospitals which have very limited facilities. One doctor from Africa wrote "With the volume on *Trauma* (which never leaves the theatre) open, my colleagues and I have done several operations successfully, which we previously knew nothing about. I was especially impressed with the descriptions of how to make burr holed for intracranial bleeding. Following the instructions, a patient who had been unconscious for 10 days woke up after evacuation of bilateral subdural haematomas."

At a rather different level of expertise TALC has sold nearly 100,000 of the books written by David Werner. His major work "Where there is no Doctor" has been translated into over 50 languages and is the most widely read book at primary health care level. We have been particularly keen to get his book "Disabled Village Children" widely distributed in all communities, as around 3 % of individuals are severely disabled. With this book anyone with perhaps secondary school education can give ideas to the family on how the health, well being and development of the disabled child or adult can be immensely improved.

The recent most successful book is "Clinical Tuberculosis". There are a number of retired doctors in the United Kingdom who have seen tuberculosis when it was severe in this country and when postmortems and surgical interventions allowed a much better understanding of the pathology than has been possible in developing countries.

Sir John Crofton, Fred Miller and Norman Horne had a wide experience of tuberculosis as it occurs in developing countries and were prepared to put their knowledge into a form which could be used by those working at district level world-wide.

Sir John Crofton, who is the principle author, has managed to raise over £ 40,000 (US $ 61,000) which has made it possible to distribute several thousand copies free and to support or encourage translations into French, Spanish, Portuguese, Russian, Chinese, Thai, Vietnamese, Indonesian, Farsee and Arabic. With an incipient world epidemic of tuberculosis associated with the spread of AIDS, this book could not have come out at a more appropriate time.

Strategies for Hope

Just as material was assembled for teaching with slides about AIDS, so also appropriate written and video tape material have been sought out to help those who face the economic, social and health disruption caused by this epidemic.

TALC has been particularly happy to work with the "Strategies for Hope" series of booklets and video tapes, published by Action Aid and AMREF (African Medical Research Foundation) and edited by Glen and Alison Williams. With the help of grants from several donor agencies, TALC has been able to distribute over 250,000 copies in English and French of the seven booklets published so far.

Over 2,000 copies of the video tapes "Taso: Living positively with AIDS" and "The Orphan Generation" have also been distributed.

TALC - One of a Network

TALC has always seen the need to work closely with other organisations. In the United Kingdom TALC works very closely with Child-to-Child[1] and undertakes the mailing of the low cost books produced for programmes world-wide.

Child-to-Child brings together those working in health and those concerned with primary school education. It started in 1978, and now there are programmes working in over 70 countries. The Trust has a document describing those programmes in 52 pages.

---

[1] Child-to-Child, Institute of Education, 20 Bedford Way, London Wc1H 0AL, United Kingdom.

Governments and international agencies have become particularly concerned that health education in many countries has not been as effective as it should. They have seen Child-to-Child as a new development which involves, motivates and enables children to become more involved in their own health as well as that of their younger siblings, their families and their community.

These countries and organisations have seen that Child-to-Child material can be introduced into the existing curriculum, or that Child-to-Child programmes can help the children to develop appropriate health education for themselves, their families and the community.

TALC also sells books produced by AHRTAG (Appropriate Health Resources and Technology Action Group)[2]. Overseas it has strong links with AMREF (African Medical Research Foundation)[3] in East Africa, VHAI (Voluntary Health Association of India)[4], and TAPS[5] in Brazil.

TALC sees an enormous potential in desk top publishing for the production of translations, local versions and new books produced for each region and for the larger language groups. Unfortunately, few governments see the local publication of books as a priority that needs their support.

Organisation of TALC

For almost 25 years TALC was run by a community group from their homes in St. Albans, 40 km North of London. This kept overheads at a very low level, and was reflected in TALC prices.

Over the last three years, the administration of TALC has been undertaken from a small set of offices and this has led to much greater efficiency, with computerisation of invoices, stock records and mailing addresses. Much of the actual packing of slides and books is still undertaken in people's own homes; some may have half a ton of books passing through their house in just a single month.

New Developments

While we believe that the selling of sets of slides and low cost books will be our mainstay for many years to come, TALC has always attempted to diversify and look for other products which are needed by teachers and trainers in developing countries.

Flannelgraphs are ideally suited for teaching in the village situation. A large number of brightly coloured pictures printed onto flannel can be cut out and placed on a blanket, on a sloping board or on the ground with a circle of men, women and children around (Fig. 3).

---

[2] AHRTAG (Appropriate Health Resource Technology Action Group), 1, London Bridge Street, London SE1 9SG, United Kingdom.

[3] AMREF (African Medical Research Foundation), Wilson Airport, POB 30125, Nairobi, Kenya.

[4] VHAI (Voluntary Health Association of India), 40 Institutional Area, South of IIT, New Delhi 110016, India.

[5] TAPS, Caixa Postal 20.396, 04034 Sao Paulo SP, Brasil.

A story is then told using local knowledge and beliefs. Through this story the audience can obtain a useful understanding of disease processes and their prevention. The audience is involved in placing the images on the board on the ground, and as a result the people carry away a better understanding of the appropriate messages.

Although initially rather expensive, these packs are full of information, and their durability and versatility justify the initial financial outlay.

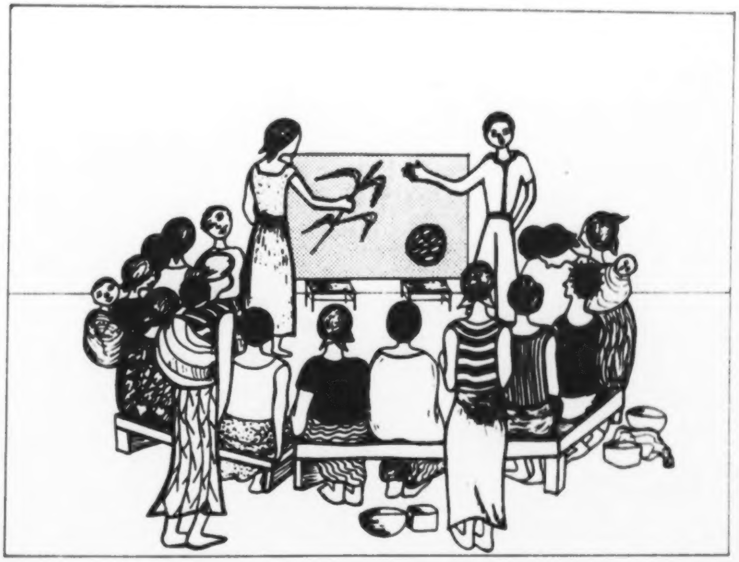


Figure 3. The Flannelgraph in use; one of the few teaching aids in which an illiterate audience can participate.

Games are an under-used method of teaching.

The concept of playing games as part of the educational process is still not widely accepted in developing countries, although encouraging children to play games is one way in which parents can help their children's educational process more effectively than in many other ways. At present TALC hopes to assist groups who are interested in encouraging the use of games more widely in developing countries.

There is anecdotal evidence that adolescents who have played a game, developed by Richard Iley and available from TALC, understood more about AIDS than others who attended a lecture or seminar.

The arrival and spread of AIDS has encouraged a wider search for appropriate methods of education and has resulted in our board game. However, those involved have found that it is sometimes necessary to teach children how to play dice games, as they are not familiar with them.

Measuring Equipment. Many health workers have been impressed by the research which indicates that the education of the mother has more effect on the mortality rates, nutrition and birth spacing in her family, than do the availability of health resources. As a response TALC has been examining ways in which it can play a more active part in the education of mothers and others in the community.

One way is through the distribution of Child-to-Child material. Another method is with the equipment TALC has developed which will allow mothers themselves to plot the weight of their child on a growth chart (Fig. 4.). The mother sees the weight of her child stretching a spring and she can mark her child's chart through a hole in the pointer. Mothers who undertake this over a few months come to understand the meaning of growth monitoring and can identify the type of growth curve that they would like their child to have.

Through this method it is hoped that the mother and the family will come to understand the simple growth charts, and that there will be more discussion in the family which will lead to appropriate action when children show a faltering in their weight gain.

Resource Units and Libraries

We are particularly concerned that district centres, hospitals and health centres should all consider providing a small resource unit for their staff. This would involve a small library of between 20 and 200 books. The library would also request a number of free newsletters which would keep the staff up-to-date with new developments. TALC has available a list of such newsletters.

There seems to be a growing interest by a number of governments and organisations in providing small libraries for primary health care units. These are desperately needed as local people come to be expected to prepare the plans for health care in their community. In many small health units books are either not looked after or they are locked away in someone's office and never get widely read. Plans need to be developed on how to set up a small library. TALC will shortly be distributing an A3 poster which will suggest how to maintain such a library.

Other TALCS

Currently TALC has grown to an annual turnover of around £ 500,000 of low cost teaching material. In spite of the world recession this volume has continued to grow. However, TALC is particularly keen to encourage other similar organisations to distribute locally in their own language. Fortunately, there are programmes such as AMREF, TAPS, VHAI and AIDAB (Australian International Development Assistance Bureau)[6]. TALC is sharing material and ideas with them and makes available appropriate books and other teaching material which are some of the most important tools to improve health world-wide.

[6] AIDAB (Australian International Development Assistance Bureau), 1-5 Geils Court, Deakin, ACT 2600, Australia.

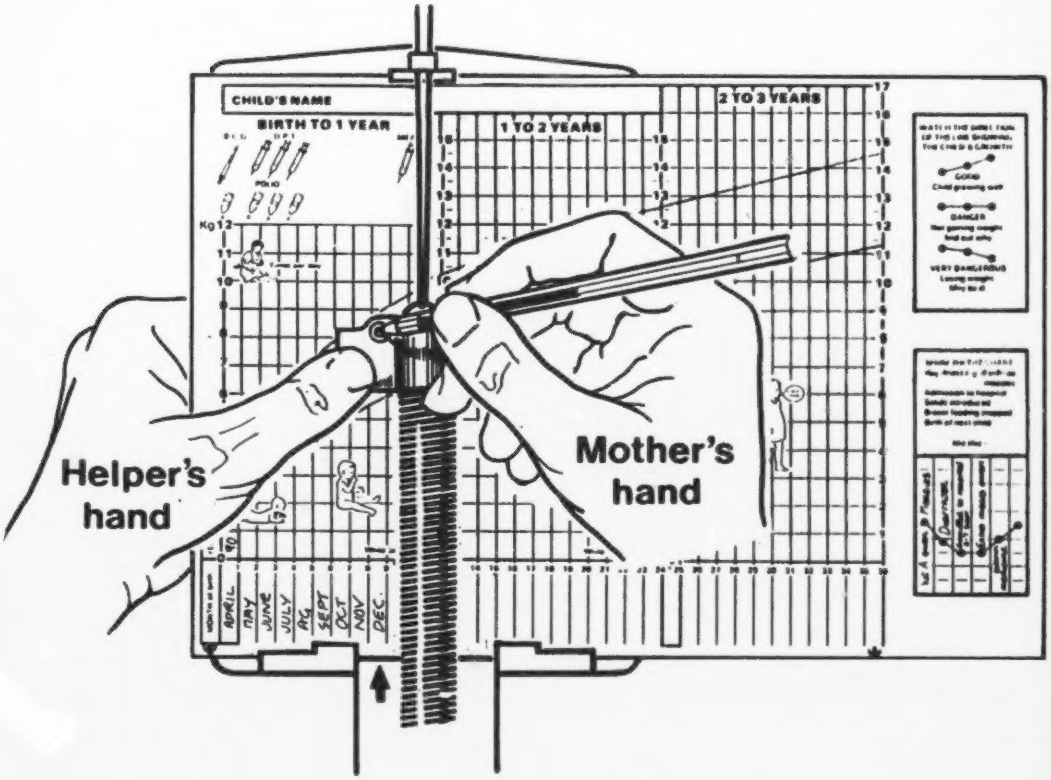

CHILD'S NAME
BIRTH TO 1 YEAR
1 TO 2 YEARS
2 TO 3 YEARS
Kg
Helper's hand
Mother's hand
APRIL
MAY
JUNE
JULY
AG
SEPT
OCT
NOV
DEC.

Figure 4. The Direct Recording Scale is an example of 'user friendly' measuring equipment developed by TALC. It is hoped to involve family and community members rather than 'professionals' in measuring children

BEST COPY AVAILABLE

Annals of Community-Oriented Education
1993, Vol. 6, 259-272

Nursing Times Open Learning Programme: An Innovation in Collaboration and Design

Anne Palmer
Nurse Education Consultant
Middlesex, United Kingdom

Abstract

This paper reports on the design and use of a distance learning programme, primarily designed to assist enrolled nurses to be upgraded to registered nurses in the British National Health Service (NHS).
The termination of enrolled nurses (ENs) as a grade in the NHS created a demand for retraining which could not be financed or, indeed, satisfied through conventional courses. The distance learning programme was designed as an alternative with the assistance of the relevant professionals accrediting authorities and the publisher of a major journal for nurses. The paper includes reflections on the difficulties and successes of this enterprise.

The Climate for Change

The *Nursing Times Open* Learning Programme (NTOLP) was developed in response to recent nursing reforms and changes within the National Health Service (NHS) in the United Kingdom. In recent years there has been increasing awareness amongst nurse educators of a need to explore ways to compliment the more traditional methods of teaching and learning. Better understanding of the assumptions about how adults learn, of curricular processes and the need to encourage ownership of learning and continuing professional development has set the scene for this innovation. Recent restructuring of the Health Service has led to a greater emphasis on strategies for efficiency and value for money. The search continues for cost effective, flexible methods of providing training and education.

The Idea

The *Nursing Times* is a clinical nursing journal published weekly by Macmillan Magazines. In 1986, a series of articles was published in the journal using an interactive text based format. The readership panel, a representative sample of journal readers, reports at regular intervals to the section editors. The panel were impressed and judged the interactive materials to be highly successful. The appointment of a new Editorial Director to Macmillan Magazines, and a new Education Editor, together with an encouraging and supportive Editor created the circumstances whereby decisions were made to explore the use of open learning materials. The Education Editor was asked to examine what other

Requests for reprints should be sent to A. Palmer, 79 Conway Drive, Ashford Common, Middlesex TW15 1RG, United Kingdom.

publications were achieving with open learning techniques. Visits to North America and Australia revealed that several magazines used open and distance learning materials, but there appeared to be a lack of suitable assessment methods and of recognisable student support. Assessment was usually by self-testing with multiple-choice questions. While the materials appeared useful for updating purposes they did not form a complete programme or course. After further consultations with the Editorial Director and two nurse educators it was decided to develop an open learning programme to complement the journal's essentially clinical perspective.

Why Open Learning?

Open learning is a method that allows students to study in their own time. It gives students more control over what they learn, when they learn and how they learn. It is a flexible approach that fits well with individuals who have many demands on their time. It was considered a suitable method, because the students could continue to practise in their own work setting. This would enable them to relate the programme materials to their clinical practice and to use their practice to inform their activities within the programme. The term open learning is used for the range of interactive methods and materials that include distance learning and correspondence course approaches (Lewis, 1985).

Historical Perspective

The UK National Health Service (NHS) came into existence in 1948, the first western health service to provide free medical care for all (Klein, 1989). The organisation of medical staff consisted of salaried hospital doctors and general practitioners in the community who were paid according to the number of patients on their practice register. Nursing structure followed that of a hierarchical model. Student nurses worked on the wards and received their training from clinical staff. A system of clinical grades, staff nurse, sister and superintendents, was headed by the imposing figure of the matron.

Expansion of services in the nineteen sixties put the focus on acute care and the further development of large regional hospitals with affiliated medical schools. The oil crisis of the early 70s and world economic concerns resulted in escalating health costs in the UK. This, in turn, led to government determination to control expenditure (Strong et al., 1990). Reorganisations during the nineteen seventies and eighties resulted in Area and District Health Authorities (DHA) being created and to the subsequent removal of Area Health Authorities. Assessment of regional resources led to the setting up of the Resource Allocation Working Party to redistribute monies from the richer to the poorer regions. An increased emphasis on community care signalled the move from acute sector care and curative approaches to that of primary care (Owe et al., 1990).

Market approaches to health

There has been a shift in emphasis in 1992 from consensus management of the early eighties to general management functions for the 1990s. The principles of efficiency, effectiveness and value for money underpin the drive for a market approach to health care. Doctors, nurses, health care professionals and patients are having to come to terms with self-governing trusts and the concepts of purchasing, providing and contracting of services (Fig. 1).

Trusts and Directly Managed Units (traditional hospitals that have yet to achieve trust status) are in direct competition to provide services for the DHA. General practitioners have their own budgets and purchase care for their patients from the choice of providers. Colleges of Health or Nursing and Midwifery do not readily fit this model of provision (Fig. 1).

Existing nurse education courses

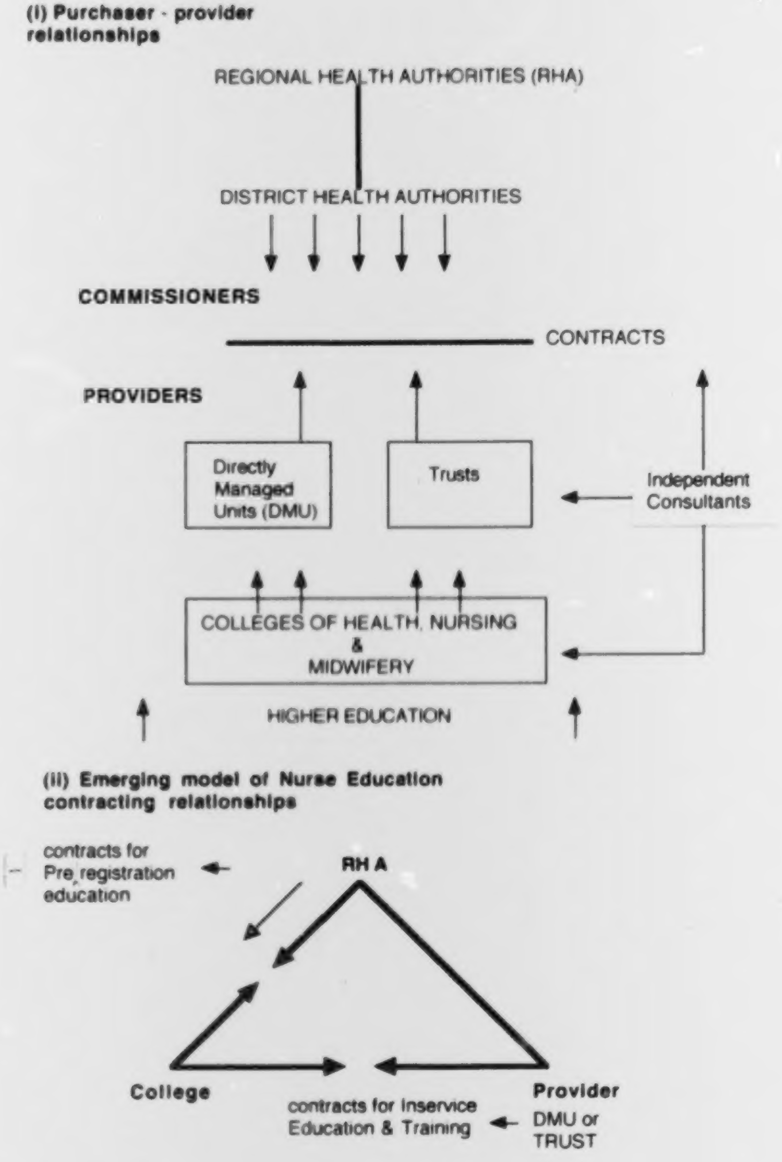
Traditional education and training programmes for registered nurses (RNs) consisted of a three year course of related theory and practice. These were organised by Schools of Nursing, recently renamed Colleges of Health or Nursing and Midwifery. The emphasis was on apprenticeship training. The students were salaried employees of the DHA. During the last decade attempts have been made to include community placements and health education initiatives, as well as to underpin practice and theory with the disciplines complementary to nursing. Following registration, RNs become staff nurses with responsibilities for managing patient care, the practice environment and other staff. They can progress through the nursing hierarchy with a range of career options.

Until recently, a second route of training was offered to those individuals who did not have the necessary entry requirements for training for RNs. These pupils completed a two year, skill-based course. On becoming enrolled nurses (EN) they were required to be supervised by a registered nurse. There was little possibility of career advancement, and few opportunities to retrain as registered nurses.

Nursing Reform

Project 2000 (United Kingdom Central Council, 1986; Department of Health, 1990) was the nursing profession's response to the challenge of providing effective nursing care into the 21st century. Concerns regarding changes in primary care and the rise in the number of elderly patients requires a nursing work force adequately prepared to deliver a high standard of care. The main proposals concerned the integration of nursing education and higher education, implementation of student status, reform of pre-registration courses and a single grade of nurse.

Amalgamations and rationalisations have resulted in a reduction in the number of Colleges, in England in particular, from a total in 1983 of 375 Colleges, to just 75 in 1992. It is expected that in the next few years this number will be reduced further to about 50 Colleges.


(i) Purchaser - provider relationships
REGIONAL HEALTH AUTHORITIES (RHA)
DISTRICT HEALTH AUTHORITIES
COMMISSIONERS
CONTRACTS
PROVIDERS
Directly Managed Units (DMU)
Trusts
Independent Consultants
COLLEGES OF HEALTH, NURSING & MIDWIFERY
HIGHER EDUCATION
(ii) Emerging model of Nurse Education contracting relationships
contracts for Pre registration education
RH A
College
Provider
contracts for inservice Education & Training
DMU or TRUST

EAP/APY 12/92

Figure 1. New relationships in the health service

The Health Service in England has a nursing work force (including qualified and unqualified nurses) of 400,000 with costs of £ 5 billion (U.S. $ 8 billion) per year. 50,000 students are currently taking pre-registration courses at a cost of some £ 600 million (U.S. $ 900 million). Pre-registration course students include those completing traditional courses and those on Project 2000 courses (National Audit Office, 1992).

EN conversion - the demand

Project 2000 established the requirement for a single grade of nurse. This raised the expectation of enrolled nurses (ENs) throughout the United Kingdom that they would be able to convert from enrolled nurse to registered nurse. By the time Project 2000 was implemented all training of enrolled nurses had ceased. A feasibility study by members of the Nursing Times (NT) planning team (Nursing Times, 1989) demonstrated that the demand for conversion courses was far greater than could be provided for by traditional methods (Fig. 2). The four National Boards of Scotland, England, Wales and Northern Ireland with the United Kingdom Central Council had agreed in principle to more flexible approaches. However, while the Colleges were preparing the new curricula for Project 2000, little was being done to meet the demands of ENs wishing to convert.

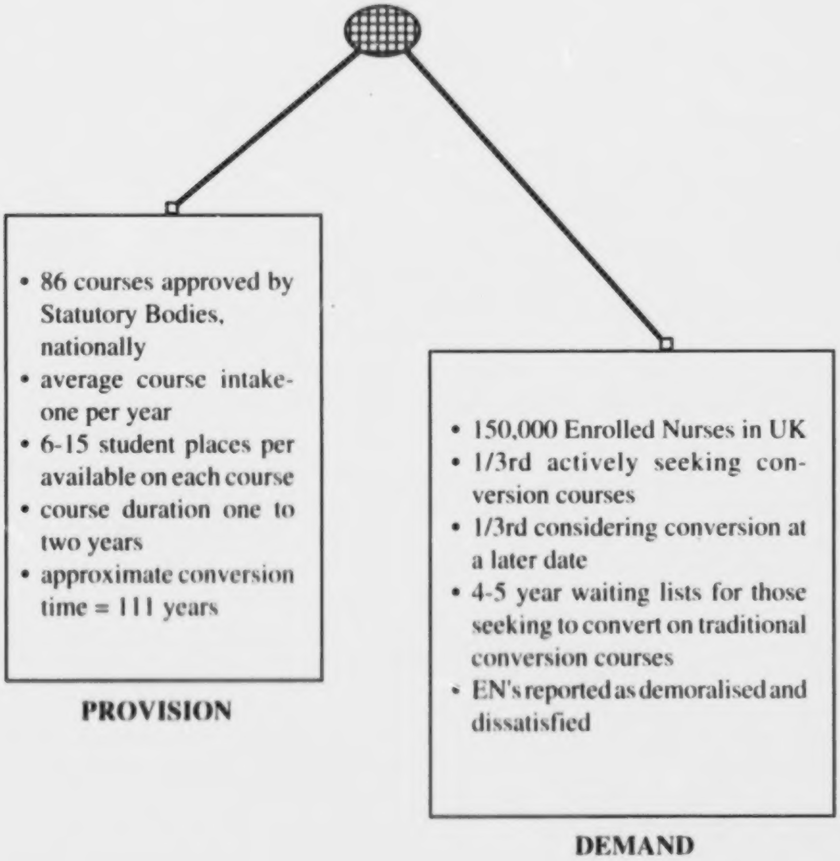
Nursing Times Open Learning Programme (NTOLP): How Does it Work?

The programme is divided into three 10 week terms per year for two years. It is designed to build upon the student's existing skills and experience to assist in making the role change from EN to RN. It consists of three modules: Research, Management, and Professional Development. It also contains three specialist units to meet the European Community Directives: Care of the Mother and Newborn, Mental Health and Mental Handicap, and Community Health Care. Students are encouraged to work on these units whenever practice experience in the relevant specialty can be negotiated. The modules on research, management and professional development are further broken down into smaller topic areas or units. Modules and units run concurrently throughout a term (Fig. 3).

The learning resources

The open learning materials appear in the pages of the *Nursing Times* each week during the three terms in each year. Terms commence in January, April, and September. The materials cover eight pages in each issue of the journal and they are designed to be colourful and attractive. The pages are perforated to enable them to be detached and placed in the student's folder.

A plan is presented at the beginning of each week's work. The particular module and unit are highlighted, and key symbols are used to indicate and explain the type of activity required.



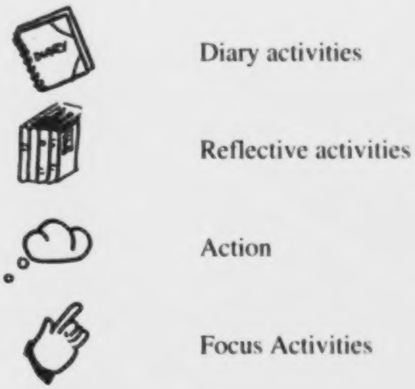
- 86 courses approved by Statutory Bodies, nationally
- average course intake- one per year
- 6-15 student places per available on each course
- course duration one to two years
- approximate conversion time = 111 years

PROVISION

- 150,000 Enrolled Nurses in UK
- 1/3rd actively seeking conversion courses
- 1/3rd considering conversion at a later date
- 4-5 year waiting lists for those seeking to convert on traditional conversion courses
- EN's reported as demoralised and dissatisfied

DEMAND

Figure 2. Findings of the feasibility study


Diary activities
Reflective activities
Action
Focus Activities

Week	Module	Unit
1	**Professional Development**	**P3 Human environment**
		(i) public health and personal health
2		(ii) organising the nation's health
3	**Research**	**R2 Focusing on research knowledge**
		(i) sources of knowledge
4		(ii) rubbing shoulders with research
5		(iii) reading research reports
6	**Professional Development**	**P4 Nursing competences**
		(i) what is a registered nurse?
7		(ii) the competences in context
8		(iii) acquiring level 1 competences
9	**Management**	**M1 Principles of management**
		(i) are you a manager?
		(ii) how do you manage?

Figure 3. Example of module and unit timing: Term 2 in Year 1

At the end of each week's materials there is a focus activity which draws together the salient points of the week's activities.

The materials are intended to stimulate reflection and encourage the students to integrate existing knowledge and experience with developing knowledge and skills and to integrate these with their nursing practice.

A student pack of supporting materials is also given out to the students when they join the programme. This pack contains the three specialist units in booklet form, and a student support pack with information and guidance on how to use the programme, information on the assessment, advice on how to use the tutor,-counsellor and practice facilitators, an annotated bibliography to support the material, and the profile pack and information on how to use it.

When the two year programme has run its course in the *Nursing Times*, the materials will be made available as a complete pack to be available for purchase like any other open learning programme.

How is the programme assessed?

The assessment strategy is designed to meet the requirements of the National Boards policies on continuous assessment. The students are required to carry out a study project. This is separated into stages, and each stage is assessed separately. Specific competences are required to obtain permission to practise as an RN. These competences are related to, for example, care management, research, teaching, health education and health promotion. The students are assessed throughout the programme by their practice facilitator who assists them in identifying goals and setting action plans related the competences which they have to achieve in their personal profile. A formal assessment component in the form of a written paper is timed and invigilated.

What supervision and support is offered?

An approved learning environment is one where the student can work with a group of clients/patients under direct or indirect supervision by their practice facilitator. The clinical learning environment is audited and approved by the local College of Health, Nursing and Midwifery.

Tutor-counsellors are experienced nurse teachers who are responsible for guiding and supporting students to assume responsibility for their own learning; facilitating student group sessions; providing negotiated individual tutorial time and counselling, and a telephone helpline with negotiated operating times, and organising and participating in annual residential student workshops.

Tutor-counsellors are supported and prepared for their new role by written materials in the form of a Tutor Support Pack and by a series of four, one day national workshops run by NTOLP. At these sessions the tutors are introduced to the concepts of open learning, the programme, resources, networking and assisted to develop skills to facilitate open learning.

Practice facilitators are practitioners who have knowledge of the field in which the student is practising. They are experienced nurse practitioners, who liaise with the student's tutor-counsellor. They are also responsible for the continual assessment and support of the student in the practice area.

Practice facilitators are prepared for their role within the College's locally approved mechanisms and by tutor-counsellors. Written guidelines are also provided by the NTOLP team, which consists of the Open Learning Director, the Macmillan Coordinator and administrative staff. A national telephone helpline is provided for all those engaged in the programme. An overview of the management and support systems is illustrated in Fig. 4.

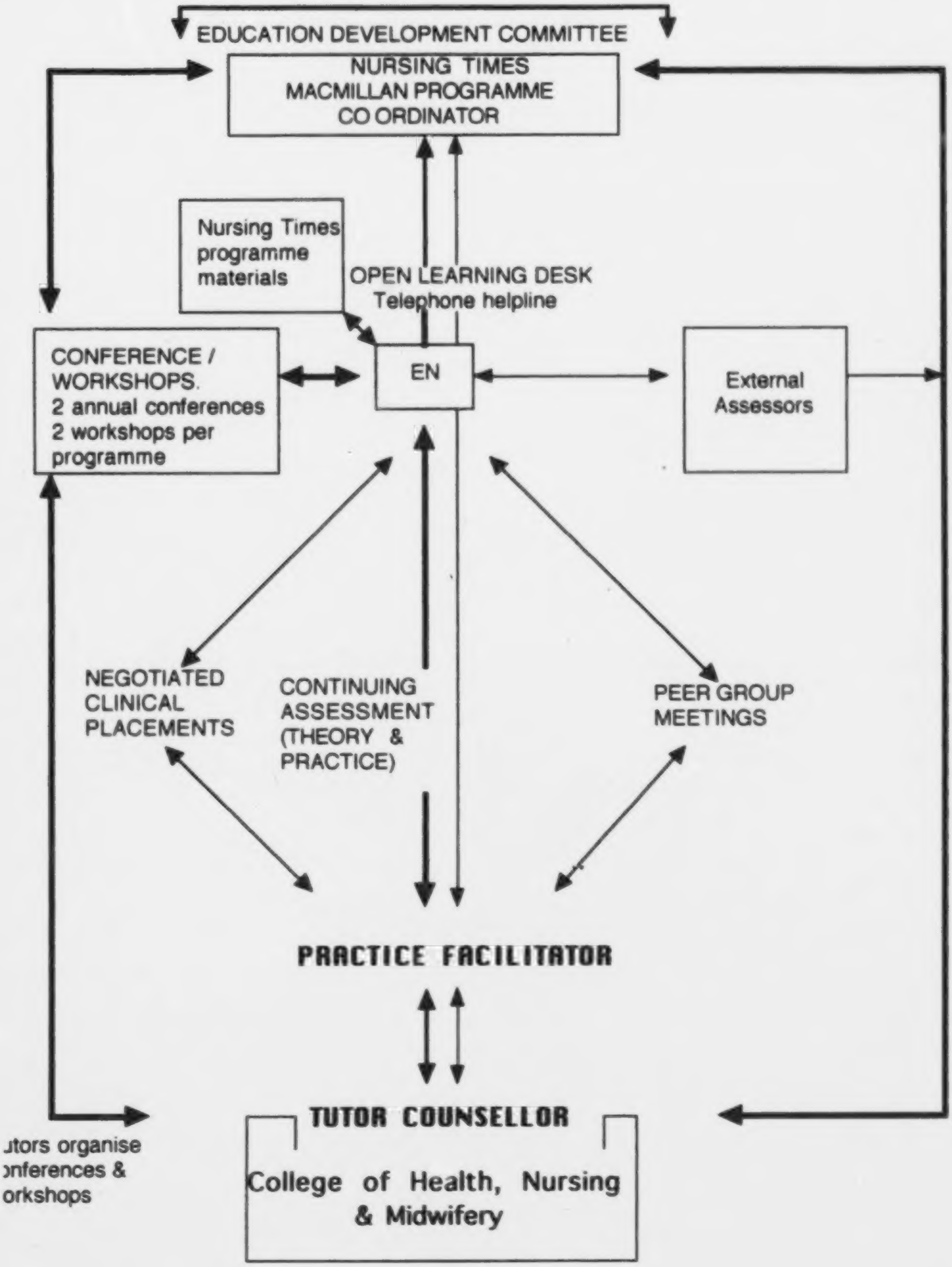

EDUCATION DEVELOPMENT COMMITTEE
NURSING TIMES MACMILLAN PROGRAMME CO ORDINATOR
Nursing Times programme materials
OPEN LEARNING DESK Telephone helpline
CONFERENCE / WORKSHOPS. 2 annual conferences 2 workshops per programme
EN
External Assessors
NEGOTIATED CLINICAL PLACEMENTS
CONTINUING ASSESSMENT (THEORY & PRACTICE)
PEER GROUP MEETINGS
PRACTICE FACILITATOR
TUTOR COUNSELLOR
College of Health, Nursing & Midwifery
ıtors organise
ɔnferences &
orkshops

Figure 4. Overview of educational management systems and support structures

Development of the Programme

The Editorial Director and the Education Editor for the *Nursing Times* met with two nurse educators as the planning team ('the gang of four'). The remit was to prepare a feasibility study for a programme of professional development and role change programme. The main aim was to offer a practical solution to the need for more flexible courses and to promote the use of open learning to a wider audience of nurses. Such a programme, it was thought, would benefit and complement existing nursing education programmes.

The aims were to: 1) offer nurses in more isolated units the opportunity to upgrade their existing qualifications; 2) provide easy access to learning materials for nurses interested in developing their practice; 3) offer Colleges of Nursing and Health the opportunity to use their existing resources more effectively; and 4) provide education, training and support for those educators involved with students on the programme.

The initial deliberations and the results of the feasibility study led to the suggestion to develop an educational programme for ENs who were making rigorous attempts to convert to RN but with little or no possibility of being accepted on a traditional conversion course. Such courses were full time and of one or two years duration. They were also considered expensive, as the salary of the ENs had to be paid by the DHA with the extra costs of funding appropriately qualified replacements while the ENs were on the course. The cost for one EN on a traditional conversion course was reported to be approximately £27,000 per year, while the cost of the NTOLP is £6,700 (Kershaw, 1992).

The development process is illustrated in Fig. 5. The planning team was expanded to form a more representative Steering Committee that took responsibility for guiding the development of the programme, through the acceptance and approval stages. Representation was extended to members from the four National Boards and the UKCC. A development team of members of the Steering Committee and authors developed the programme and the learning processes for each unit within the framework of the initial curriculum design. Authors were given extensive written briefs to guide their work.

Unit materials were sent to test centres where groups of volunteer students and tutors worked through and 'tested' the materials. Units were also sent to critical readers and members of the Steering Committee for constructive criticism. The results from the test groups and the comments from the critical readers were fed back to the authors and the Steering Committee. Radical changes were sent back to the critical readers and testing centres, and materials were rewritten if necessary before being accepted.

Challenge and tensions

The main challenge was the development of an educationally sound and commercially viable programme. This was to be achieved at a time when there were no similar initiatives to draw upon. The complexities of the differing partnerships - representatives of the Publishing Company, National Board, UKCC, educators, open learning experts and

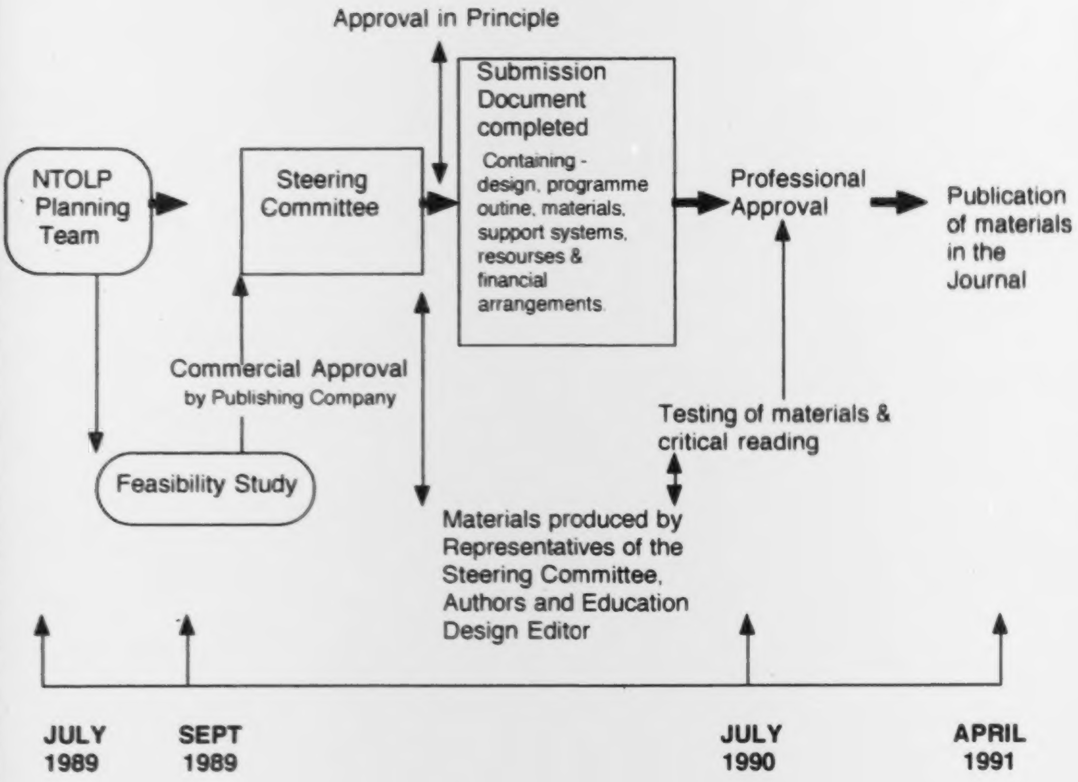

Approval in Principle
NTOLP Planning Team
Steering Committee
Submission Document completed
Containing - design, programme outine, materials, support systems, resourses & financial arrangements.
Professional Approval
Publication of materials in the Journal
Commercial Approval by Publishing Company
Feasibility Study
Testing of materials & critical reading
Materials produced by Representatives of the Steering Committee, Authors and Education Design Editor
JULY 1989
SEPT 1989
JULY 1990
APRIL 1991

Figure 5. The critical PATH: Significant stages in the development of the NTOLP in relation to processes and time

authors, appeared to arise from the differing motivation and vested interests of the various parties (Table I).

Table I. Agenda and motivation

Members	Agenda	Motivated by
Educators	Responsible for preparingcurriculum design and submission, preparation of tutor-counsellors, profile development, developing open learning materials.	Concern for the plight of ENs, challenge to the profession, a move to flexible student-centred education.
Publisher	Responsible for financial provision, quality of the materials, effective launch of the programme, and its quality assurance.	Possibilities of new markets, increase in market share, need to increase educational component in the journal.
Statutory bodies	Responsible for approval of programmes in Colleges, giving professional guidance and advice, approval of submission, effective use of resources.	Concern with ENs, a need to share innovation, a requirement to maintain professional identity.

Facing the challenge

The success of the programme, its educational rigour and commercial viability rest on the personal commitment and the strategies that were identified during the initial development phases. At the centre of the various activities was a clear focus of what was required of the individual members and resulting partnerships. Effective leadership by the Editorial Director, whose considerable publishing expertise and vision was complimented by the drive and commitment of the Education Editor, ensured that development got off to a good start. The Education Editor assumed the mantle of leadership as the project took shape. Good communication and sound financial backing enabled the creative individuals of the Steering Committee to function as a team.

The success of the programme was aided by clear intentions, effective planning, ownership of the programme, and individual focus (Table II).

Table II. Factors for success

Clear Intentions

- the terms of reference were recognised by everyone involved; and
- clear outcomes were identified for the students, the programme, as well as for nursing and the publisher.

Effective Planning

- use of the planning team to 'kick start 'the initiative;
- balance of educational, commercial and professional interests;
- building of trust between members; and
- good use of relevant expertise as required.

Ownership of the Programme

- shared belief in human potential;
- common interests to produce quality materials;
- ensuring commercial and educational credibility; and
- shared concerns for the future of nursing.

Individual Focus

- identified profile of the individual student;
- provision of adequate support frameworks; and
- clear 'visual' image to produce materials that are user-friendly, interactive, accessible and, after the initial outlay, cost effective.

Evaluation

The NTOLP celebrated its first year anniversary in April 1992 with over 1,500 students working through the programme, supported by 25 Colleges, and an open learning database of over 19,000 enquiries. The students have proved able to cope with the rigours of the programme. The drop out rate has remained at 1.3% with individuals only leaving due to pressing personal circumstances. When the term commenced in September 1992, student numbers rose to 2,200. Another 250 students started the programme in January 1993.

In the words of one of the students: **"It's like educating Rita; it's that sort of thing when the blinkers come off and you open the lid off your brain. You reach inside yourself."**[1]

Acknowledgements

In attempting any creative educational exercise there are many individuals who contribute to its success. Grateful thanks must go to everyone who believed in and supported the venture through the critical phases of development - The MacMillan Board, The Statutory Bodies, The Members of the Steering Committee along with the many students, ENs, tutors and practitioners who field tested the materials.

In particular I should like to mention the other three members of the Gang of Four Mary Waltham, and Jill Fardell for their vision and leadership and Bob Price for his clarity of thought. We could not have achieved our objective had we not had the support of Editor Linda Davidson, along with the organisational backup provided by the hard working administrative staff of the Nursing Times.

I would also like to thank Ron Barnet & Robin Middlehurst for inspiring confidence and to Charles Engel who is prepared to share his experiences and who always asks the right questions to set me thinking.

References

Department of Health. (1990). *Project 2000. Your questions answered.* London, United Kingdom: HMSO.

Kershaw, B. (1992). *Managing the change to open, distance learning: Considerations for purchasers and providers.* Conference paper. Manchester, United Kingdom: Nursing Times Open Learning 2nd National Conference.

Klein, R. (1989). *The politics of the NHS.* 2nd edition. London, United Kingdom: Longman.

Lewis, R. (1985). *How to develop and manage an open learning scheme.* Open Learning Guides. London, United Kingdom: The Council for Education Technology.

National Audit Office. (1992). *Nursing education: Implementation of project 2000.* Report by the Controller and Auditor General. London, United Kingdom: National Audit Office.

Nursing Times. (1989). (Unpublished study). *Preparation for conversion.* Feasibility study presented to the Macmillan Board. London, United Kingdom: Nursing Times. Owens, P., & Glennerster, H. (1990). *Nursing in conflict.* Basingstoke, United Kingdom: Macmillan.

Strong, P., & Robinson, J. (1990). *The NHS under new management.* Milton Keynes, United Kingdom: Open University Press.

United Kingdom Central Council. (1986). *Project 2000: A new preparation for practice.* London, United Kingdom: UKCC.

---

[1] This refers to the book, Educating Rita, by Willy Russell and made into a film. Rita (Julie Walters) is a young housewife who discovers the liberating experiences of higher education. She attempts an Open University degree, supported by a disillusioned academic tutor (Michel Caine).

Annals of Community-Oriented Education
1993, Vol. 6, 273-281

Standardised Patients: A Trainer's Perspective

Sydney M. Smee
Medical Council of Canada
Ottawa, Ontario, Canada

Abstract

Thirty years ago, and maybe even ten years ago, standardised patients (SPs) were an innovation in medical education. However, as the literature reflects, SPs are being used by more and more medical schools. For innovation to become accepted practice, it has had to overcome the resistance to "fake" patients and to its cost. Acceptance of SPs has grown to the point that their use at the licensure level is becoming a reality. Despite this growing acceptance of SPs for both teaching and assessment, there is still little information available to the newcomer on the "how-to's" of using SPs. This article addresses some of the basic issues related to the use of SPs from the perspective of a non-physician SP trainer whose experience stretches over the last 18 years and three different institutions. Thus, it is a very practical look at the first steps in recruiting and training SPs.

Introduction

It has been almost thirty years since the first article on the use of a trained patient for medical teaching was published (Barrows et al., 1964). Since this time, the use of standardised patients (SPs) for teaching and assessing clinical skills has infiltrated medical education in North America (Stillmann et al., 1990; Swanson et al., 1990) and elsewhere (Hart et al., 1986; Hart et al., 1987; Bender et al., 1990). The development of Objective Structured Clinical Examinations (OSCEs) for assessing clinical skills has relied heavily on SPs (Van der Vleuten et al., 1990). The growing acceptance of SP-based OSCEs reflects the degree to which they have been refined, and "SP technology" is now being incorporated into the important licensure examinations (Reznick et al., 1992).

Definition

Standardised patients are people trained to present a patient problem realistically and reliably. They are used for teaching and assessing clinical skills in simulated encounters with health care professionals. Some of the other terms used to describe them are simulated patients or programmed patients. Terms like "fake patients" are generally not appreciated by either SPs or those who train them, because the term does not recognise the training, skill and commitment that SPs bring to their work. Related to SPs are patient instructors (PIs) (Stillman et al., 1980) and gynaecological teaching associates (GTAs) (Guenther et al.,

---

Requests for reprints should be sent to S. Smee, Evaluation Bureau, Medical Council of Canada, P.O. Box CP8234, Ottawa, Ontario K1G 3H7, Canada.

1983). In both cases, these people are non-physicians trained to teach basic physical examination skills by acting in the multiple roles of patient, teacher and assessor.

Objections

In the author's experience, and that of others, there has often been a resistance to the use of SPs. It is often on principle and commonly on the basis of cost. An unwillingness to accept the use of simulation is often based on the belief that because it is "fake" it has no value; that one cannot learn about real patients by working with "fake" patients. This belief also may be based on unfamiliarity with SPs and erroneous assumptions of their credibility, or it comes from experience with poorly-developed simulations. Sometimes the resistance to SPs may be the resistance that is common to any innovation. On an anecdotal basis, many medical academics who are hostile to the use of SPs become enthusiastic after a positive experience.

Cost

Concerns about the cost are a frequent source of reluctance to develop SP programmes. Cost includes: 1) developing the case materials to train SPs (a case includes the instructions to the student, the scenario the SP must learn and a checklist or questions that may be used to assess the student); 2) the time to recruit, select and train SPs, whether it be one or more; 3) space for training the SPs; and 4) administrative costs of scheduling and paying the SPs. However, if a programme is being piloted it can be started on a small scale and need not be expensive. Many costs can at least initially be absorbed by a school. It does not take an enormous amount of time to write a case, although if it is being used for assessment it should receive the attention of more than one author. If only a few SPs are being recruited this is not a large task. SPs need to be paid but this is usually done on an hourly basis, and often with a slightly lower rate for training time. Costs are relative to the use of SPs. If the person who will recruit and train the SPs is on the staff, their time may already be covered so long as they can allocate some of their time to the extra work.

Benefit

Benefits include the generally positive response of both students and teachers to the experience. It enriches the learning environment in a way that cannot always be measured. In some instances, the use of SPs for teaching may reduce or focus faculty teaching time. Using PIs to teach basic physical examination skills allows instructors to focus their teaching on identifying positive findings rather than on correcting technique. Practising the breaking of bad news or dealing with sensitive patient problems are dramatic examples of areas where SPs are, at least initially, a legitimate replacement for real patients. Using SPs for assessment is an efficient, structured way for assessors to observe clinical skills. Some costs are ameliorated over time. Once trained, an SP can be used on many different occasions and will learn new roles and skills more quickly. As a programme develops, recruitment is often a non-issue as people will seek out the coordinator looking for an opportunity to become involved.

SPs are trained to present the same patient problem repeatedly, they are available, and encounters can be scheduled. Problems that do not commonly present in the teaching hospital environment can often be simulated, so that particular content areas are not shortchanged due to lack of patients. SPs can also be trained to give feedback from the patient's perspective, thus providing useful insights into how the health care professional is perceived. Interaction with an SP can be stopped to allow for reflection or discussion. The simulation can then be picked up at the point it was left, started over again, and/or include a switch in who is interacting with the SP.

Interactions with SPs should not be confused with role plays, as there is an enormous qualitative difference. Role plays are frequently carried out within groups where both parties are already familiar with each other as peers, where the person playing the client or patient has rarely had much time to prepare for the role and is working without standards of presentation. At the extreme, role plays often involve an enormous credibility gap in that the sex, age and/or appearance of the person playing the role may not match the patient's characteristics, and the person role playing may be reading from written materials during the interaction. The use of SPs circumvents these problems.

There are many uses for SPs: teaching physical examination skills, history taking, interpersonal skills, management of trauma cases (Table I). However, there are a number of concerns that need to be addressed when introducing SPs to a particular course, curriculum or assessment exercise. Some concerns relate to gaining faculty support, acquiring the necessary resources (such as space, money) and others relate directly to recruiting, selecting and training SPs. It is the latter area that is the focus of this paper, although none of the practical or political aspects of starting up an SP programme are directly addressed in most of the literature. Some print resources do exist (Frazer et al., 1977; Meier et al., 1982; Norman et al., 1985; Barrows, 1987; Tamblyn et al., 1990) and some programmes offer workshops, although these are frequently offered on an irregular basis.

SPs are trained to present the history, the affect and the symptoms of a patient case realistically. The SPs are selected because they match essential physical characteristics of the patient case and are then trained to simulate the rest of the scenario. They are given guidelines as to what information they are to give under different circumstances, how to respond to different approaches and what questions to ask. They know how to move and respond in a manner consistent with the physical symptoms of a case; both while verbally interacting with a health care professional and while being examined. An SP presenting a back pain problem would sit, walk and move as if they had the problem as well as display the appropriate loss of range of motion, change in sensation and altered reflexes on examination.

Table I. Uses for standardised patients in teaching and assessment

USE	EXAMPLE	VARIATIONS
History taking	Female patient, 64 years old, has come to your office complaining of abdominal pain. She is a new patient - take a complete history.	* give patient hidden agenda / problem * simulate physical findings or tgrain patient with stable findings * use time limits and focus on one aspect of patient presentation * use in small group teaching - re-run problem * include SP feedback on patient's perception of physician's approach * include SP feedback on physician's skills * give patient multiple problems * add / modify SP affect
Physical examination	Conduct a complete physical examination of this patient, OR conduct a respiratory, neurological, or other examination of this patient. *(There does not need to be a presenting problem).*	
History taking and physical examination	Male patient, 55 years old, has come to your office because of recuring episodes of dizziness and unilateral weakness - take an appropriate history and conduct a focused physical examination.	
Problem management	Male patient, 22 years old, has been brought to Emergency following a motorcycle accident. Assess the patient and order investigations as appropriate; if results are provided, interpret them.	
Communication	Explain to male patient, 44 years old, that his test results indicate that he has a malignancy.	
Ethics	Female patient, 36 years old, is seeking support and advice for sexual assault by her previous physician. Respond to her concerns and questions.	

BEST COPY AVAILABLE

Qualities of a Simulator

Knowing how you would like to use SPs provides the focus for finding and training one or more people. For instance, to teach history taking you will want people with good communication skills, curiosity about medical problems, some insight into their own behaviour, and a positive attitude toward the health professions. teaching Important qualities are also teaching skills, even from informal experience, comfort with being physically examined (especially for someone who will be trained for multiple roles), and a sense of humour.

Acting skills can be a real asset but they are not a prerequisite, nor is a health care background. However, bring with them experience and skills that are very helpful, but personal qualities and biases need to be considered as these may negate the benefits of professional skills. An actor may not present the patient case in a standardised fashion or not respond to the different approaches of the students. There is more to simulating than acting out the patient affect. SPs almost always work one-to-one or in small groups. Thus, acting techniques that work on stage or camera are not always suitable for a small clinic space. Health professionals as patients, and even as trainers, may have difficulty in adopting the patient's perspective. It is also harder for some health professionals to simulate a patient's level of naïvety in response to medical jargon and the nature of the medical problem.

Motivation to be an SP is Critical

Some of the desirable reasons given by prospective SPs are a wish to learn more about medical problems or believing that being an SP is an important opportunity to contribute to medical education. There is rarely enough work or money for SPs to consider their involvement as more than an extra job.

Recruiting Simulators

Recruiting by word of mouth is probably the best method. Posting notices around the health care facility or the university, going to nearby community centres or using local public notice boards have all been successful. No matter how potential SPs come to you, it is best to interview them *before* you begin their training.

Helpful questions in an interview include: 1) asking about their experiences with the health care system - specifically asking for positive and negative examples to assess their attitude towards health care professionals; 2) asking about any teaching/counselling or volunteer/professional counselling experience. Answers may indicate their knowledge of giving feedback and their ability to step into the teaching role if they will be expected to give feedback; 3) asking them what moods or affects they feel they could act out most easily and which might be difficult. This can help to match them with specific cases and may give an indication of the applicant's insight into how their own behaviour may interact with the role of an SP; 4) asking if there are any topics that they would rather not be involved in for personal or other reasons (e.g., a request for abortion or birth control, dealing with terminal illness) can help to assess the applicant's self-perceptions. It may be important to ask about health problems that are "visible". Surgical scars, hearing loss or a heart murmur are examples of things that could add to *or* contradict a simulated case; 5) asking how this work might relate to their other interests and activities may give some indication of their motivation. Earning money or getting a fixed message to doctors may not be suitable reasons; and 6) asking if they would be comfortable with being physically examined in a clinic/teaching setting may be important, depending on your expectations. It is only fair to deal with this at the very start.

It can be quite helpful to ask the applicant to do a brief simulation with you, right on the spot. Give them a brief training run on a simple problem, like a headache. Let you go away with the written materials for a few minutes and then act it out with them. Their comfort with giving it a try will be as important as their ability to portray the headache in deciding if they are right for what you have in mind.

This may seem like an inordinate amount of attention to the selection process. However, selection is not always as simple as it may appear, especially if the SP trainer is new. There is never enough time or money to train all the skills or to develop all the attributes that are wanted in a good SP. Within a short time period, a person can be trained to simulate a certain affect and some physical symptoms and to acquire enough knowledge to give feedback. With a little more time it is also possible to refine their interpersonal skills. However, you will never have the time needed to train a person with poor interpersonal skills, with a resistance to learning or a negative attitude.

Training Simulators

Working from real patient cases is very helpful for maintaining the validity of the case, setting the affect and preventing gaps in the information given to the SP. When using a real case, you may wish to edit it for extraneous material, so that training can be simplified. With care and experience, cases can be artificially constructed; but it is still important not to include unnecessary information. Generally a case would provide the following information: 1) setting (e.g., clinic, emergency); 2) whatever information the health care professional will be given (such as patient's name, age, stated reason for coming to the appointment): 3) patient's history. This is focused on the presenting problem(s) from the patient's perspective. If the patient has a headache they will need to be able to describe its onset, duration, quality of the pain, etc. *in their own words*. This may require more detail than might be recorded on a patient's chart. In addition, SPs need to know what symptoms they see as related to the problem and which ones they know they have, but are unaware of how they are connected. All these issues will affect how they will respond to the health care professional; 4) patient's agenda. Do they believe this is a simple problem, a serious one, are they worried about it or merely inconvenienced? Are they hiding anything? This information will guide the SP in responding to the different tone and approach of each health care professional in a consistent fashion; 5) if the SP will be used for assessing the

student then the assessment instrument (usually a checklist) should be reviewed with the SP as part of their training. How the checklist is designed will affect how an SP will present the case. If poorly constructed, it will negate the SP's ability to present it credibly.
For instance, when the checklist divides the time of onset of the headache ("It started yesterday afternoon.") from the precipitating event ("I was jogging when the headache started.") then the SP must keep these two pieces of information separate and must not volunteer either of them. So, if asked how the headache started the SP would explain that it came on while jogging. To include the information that this happened yesterday would pre-empt the student from asking when it started. In an assessment the examiner would have to give credit for two items without knowing if the student would have asked for time of onset. Do not underestimate the importance of checklist construction. This is a simplistic example to illustrate the point. ; 6) affect needs to be described in detail. If the patient is worried, the SP needs to know how worried; wringing their hands and sitting on the edge of the chair? Do they say how worried they are or only acknowledge it when asked? Direction regarding SP posture, movement, tone of voice, pacing, and appearance (e.g., poorly or well dressed, neat or untidy) are all important; 7) physical symptoms need detailed descriptions and possibly diagrams; e.g., loss of range of motion needs to be given in degrees. For instance, "patient cannot flex right hip beyond 60°". Information on how the symptoms affect the patient at home and even during the simulation need to be detailed. For example, does it make it hard to get out of the chair, are they so short of breath they cannot finish sentences or does the pain make them impatient with a long history?

Good case materials simplify the training process considerably as well as make it easier to train several SPs on the same case. The degree of attention given to them here is based on the assumption that the SP trainer is not (perhaps should not be) the case author. Although physicians do train SPs, the non-physician SP trainer is an emerging occupation. Such a person works with the academics to develop cases, to incorporate SPs into a course or project and takes primary responsibility for managing SP resources. They might better be known as an *SP education specialist.*
The training might go as follows:1) if the case can be related to anything in the SP's personal experience or that of someone they know, it may help the SP to portray the signs and symptoms; 2) after reviewing the case, the SP can be given an opportunity to act out the role, i.e., display the symptoms and practice responding to questions; 3) when it is clear that SP understands the problem and how it should be presented, s/he needs to take the case home to practice it. An experienced SP trainer will provide the SP with suggestions specific to the case and encourage constructive review of the material before the next training session; 4) the SP should receive clear feedback on what s/he is doing well and what is needed to do better. The trainer needs to build the SPs confidence in what they are doing;and 5) once both trainer and SP are satisfied, then the SP's presentation should be reviewed by the author or a physician familiar with the case. In situations, where the case has been used before and the trainer is well versed in it, review by a physician may be unnecessary.

If SPs are to give feedback to the student or a teacher, they should receive training appropriate to what is expected of them. Training should always include practice, as problems with a case may not be apparent when it exists only on paper. A trainer cannot identify a misunderstanding about the case or the degree of affect expected unless the SP's performance is observed.

Conclusion

Retaining good SPs is as important as selecting and training them. SPs have proved that they have an important role to play in medical education. The return on your investment in an SP programme will only be as good as the quality of the components of your programme, i.e., case development, SP selection, SP training, SP delivery, and feedback procedures to the students, the SPs and the teachers.

References

Barrows, H.S., & Abrahamson, S. (1964). The programmed patient: A technique for appraising student performance in clinical neurology. *Journal of Medical Education, 39,* 802-805.

Barrows, H.S. (1987). *Simulated (Standardized) patients and other human simulations.* Chapel Hill, NC: Health Sciences Consortium.

Bender, W., Hiemstra, R.J., Scherpbier, A.J.J.A., & Zwierstra, R.P. (Eds.). (1990). *Teaching and assessing clinical competence.* Groningen, The Netherlands: BoekWerk.

Frazer, N.B., & Miller, R.H. (1977). Training practical instructors (programmed patients) to teach basic physical examination. *Journal of Medical Education, 52,* 149-151.

Guenther, S.M., Douglas, W.L., & Matthes, S. (1983). Effectiveness of the gynecological teaching associate in teaching pelvic examination skills. *Journal of Medical Education, 58,* 67-69.

Hart, I., Harden, R., & Walton, H. (Eds.). (1986). *Newer developments in assessing clinical competence.* Montreal, Canada: Can-Heal Publications Inc.

Hart, I., & Harden, R. (Eds.). (1987). *Further developments in assessing clinical competence.* Montreal, Canada: Can-Heal Publications Inc.

Meier, R.S., Perkowski, L.C. & Wynne, C.S. (1982). A method for training simulated patients. *Journal of Medical Education, 57,* 535-540.

Norman, G.R., Barrows, H.S., Gliva, G., & Woodward, C. (1985). Simulated patients In: V.R. Neufeld, & G.R. Norman (Eds.). *Assessing clinical competence.* New York, NY: Springer Publishing.

Reznick, R., Smee, S.M., Rothman, A., & Chalmers, A. et al. (1992). An objective structured clinical examination for the licentiate: Report of the pilot project of the Medical Council of Canada. *Academic Medicine, 67,* 487-494.

Stillman, P.L., Ruggill, J.S., Rutala, P.J., & Sabers, D.L. (1980). Patient instructors as teachers and evaluators. *Journal of Medical Education, 55,* 186-193.

Stillman, P.L., Regan, M., Philbin, M., & Haley, H. (1990). Results of a survey on the use of standardized patients to teach and evaluate clinical skills. *Academic Medicine, 65,* 288-292.

Swanson, D.B., & Stillman, P.L. (1990). Use of standardized patients for teaching and assessing clinical skills.*Evaluation and The Health Professionals, 13,* 79-103.

Tamblyn, R.M., Klass, D.K., Schnabl, G.K., & Kopelow, M.L. (1990). Factors associated with the accuracy of standardized patient presentation. *Academic Medicine, 65,* S55-S56.

Van der Vleuten, C.P.M., & Swanson, D.B. (1990). Assessment of clinical skills with standardized patients: State of the art.*Teaching and Learning in Medicine, 2,* 58-76.

Annals of Community-Oriented Education
1993, Vol. 6, 283-290

A New Tool for Change in Intersectoral Systems

Lawrence F. Raymond
Visual Symbol Language Research Center
Andover, MA, United States of America

George L. Dorros
World Health Organization
Geneva, Switzerland

Abstract

Solutions in the prevailing turbulent social, economic and environmental conditions call for a system-wide perspective which can be addressed only by multidisciplinary or multisectoral teams. While good leadership is essential, tools which facilitate visual thinking, build teamwork, generate commitment to change, and create linkages with other sectors are needed. Mission MappingTM is a visual method and tool for planning changes in complex systems which address these needs. It has been used in both public and private sectors in Europe, Asia, Africa and North America. Mission MappingTM procedures are described, and an example of its application by the Government of Zambia to plan a government reform programme is presented.

Introduction

Leaders and managers faced with complex intersectoral problems need the best possible tools and methods in order to succeed. Attempts at inter-professional and inter-sectoral collaboration often fail due to: differing values, beliefs and priorities; ineffective verbal and written communications; inability to see the whole and appreciate the importance of interactions outside one's own sphere; confrontational dialogue; tendency to defend one point of view and not listen to others; no interest to invest in consensus building; frustration and recrimination resulting from slowness of problem resolution; lack of creativity; fear of change; inadequate action planning; and lack of commitment to plans.

While these obstacles are formidable, they can be overcome. A new visual symbol communication process has proved to be effective in pulling people together to solve problems. With adaptation and expansion it has the potential of being useful for a wide variety of intersectoral needs.

The Visual Symbol Modelling Method

Drawings and icons have been used since man's earliest communications to illustrate ideas

---

Requests for reprints should be sent to G. Dorros, World Health Organization, Division of Strengthening Health Services, 1211 Geneva 27, Switzerland.

or support presentations to groups.
Useful examples of more intensive use in recent years can be found in Hope and Timmel (1989) and Srinivasan (1990).
One of the authors (G.D.) first used drawings and symbols for problem solving in the Philippines in the late 1970s as part of an action research project, where community participation was needed to identify environmental sources of diseases. While consulting on organisation effectiveness with private businesses in Europe and for the United Nations (U.N.) in South Asia and Africa, the other author (L.F.R.) drew on the use of symbols and methods used in information system design and developed a visual symbol modelling tool that uses icons. The authors have collaborated over the past two years to apply and enhance visual methods to improve inter-sectoral cooperation.

The visual symbol modelling method is called Mission MappingT^{M}. It provides a library of predrawn symbols stamped out on self-adhesive sticker paper. The symbols, when defined in a context, become a language to analyse or develop processes and build plans for change. Each symbol has a generic meaning (such as: a piece of information, an obstacle to its flow, an action ...) that is made explicit when group members write the specific, contextual meaning on an accompanying sign. The symbols and signs are applied to coloured background paper to make maps of the processes (Fig. 1).

Mission Mapping^{TM} employs a metaphor that relates a change process to an expedition through the wilderness. There are three steps:
1. Build a map of the existing process in question.
2. Build a map of the ideal future process.
3. Map the strategies and actions to achieve the ideal.

The method has been used with groups of from two to fifty people, but 10 to 20 is the typical and most manageable range. Consensus is reached by having small groups of three to five people build maps which are later discussed by the entire group. This approach builds an image of a current or future reality, achieving consensus first at the small group level and then in the entire group. Workshops using this process take from two to three days, depending on the nature of the issue being addressed.

The Mission Mapping^{TM} method has proved successful in large and small organisations. It contributes most when the problem or opportunity is most challenging: where cultures and attitudes of people are markedly different; when multiple organisations are involved; when responsibility is shared and authority is not precisely delineated; when the issue is important and the solution is needed urgently; and when high stakes are accompanied by high emotions.

Mapping in Developing Countries and in Health Systems

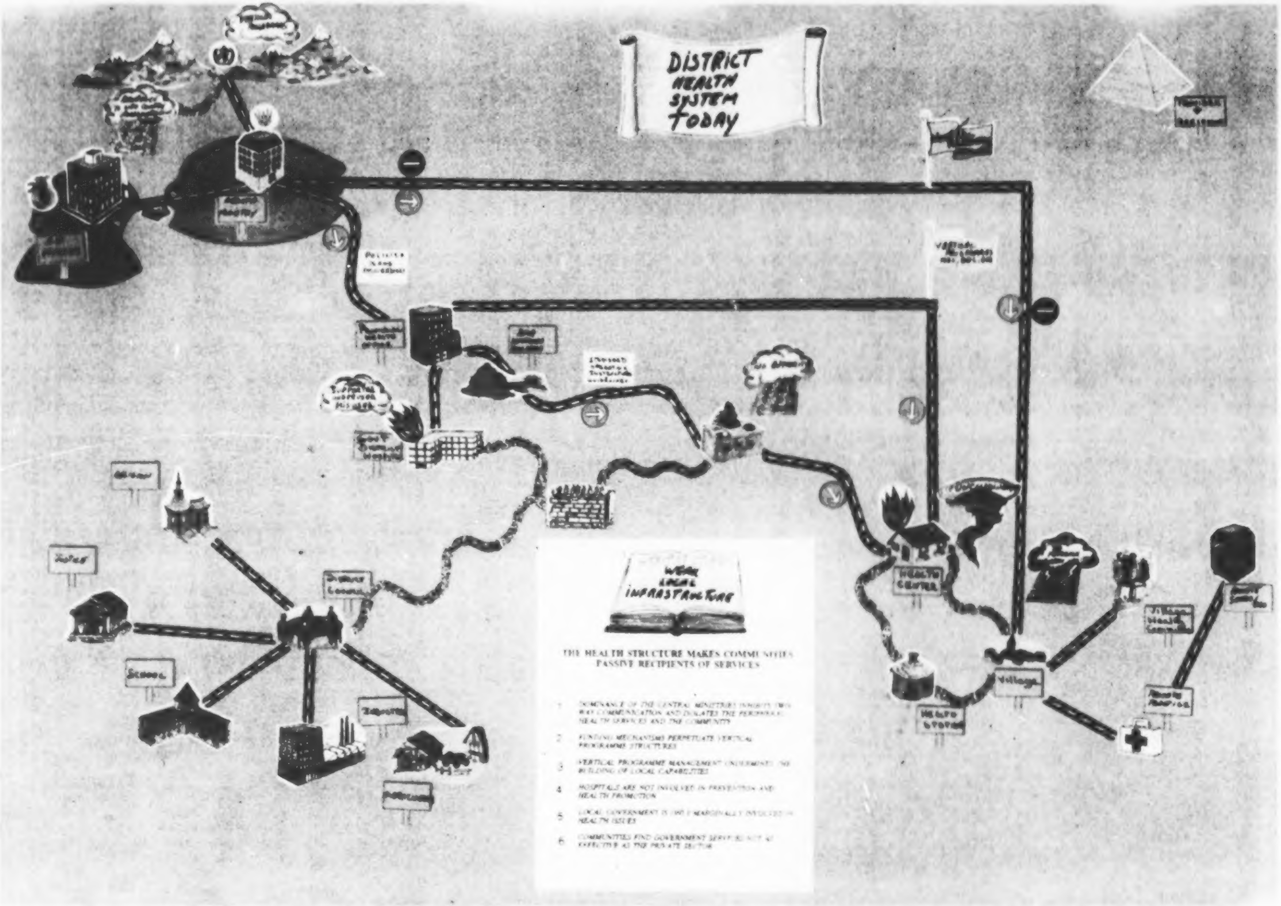
The World Health Organization has used Mapping in planning sessions at its headquarters, for training of WHO representatives, for the Health Ministry of Guinea-Bissau, and in the health systems in Zambia and Zimbabwe. The World Bank sponsored a workshop in Zambia for public sector reform, which included the Health Ministry. The U.N.'s International Trade Centre has used it in planning activities for China and Sri Lanka.

The following principles have been emphasized in applying the Mapping approach to the health systems of developing countries.

1. When an issue becomes visible, is important, urgent and crosses sectoral boundaries, the responsible authorities should be quick to address the issue through direct discussion with the parties involved. Because questions of responsibility often cause great delays in starting the resolution of issues, senior people need to see the identification of issues and the assignment of responsibility as their major contribution to the resolution.
2. The process of solving problems should be based on self-help, rather than on engaging "specialists" to study the issue, report findings, etc. This increases ownership of the solution and of its implementation. This, in turn, increases speed and lowers costs. Highly participatory workshops are the preferred approach.
3. Workshop organisers must start by identifying the process or processes underlying the issue or problem. A process is defined as "the flow of information or materials among a number of groups of functions, in order to achieve an objective."
4. All the "stakeholders", that is those who are involved in the process in question, should be convened to participate in the analysis, regardless of their hierarchical level. The stakeholders must be respected by their peers; together they have full knowledge of the existing process and together they have the authority and power to make change. Any omission of key stakeholders leads to a "not invented here" attitude and can stifle effective action.
5. A workshop needs to be a partnership of equals where all relevant knowledge is valued. Specialised knowledge of health technology and practical knowledge of the local working processes and environment are equally important to the solution of problems.
6. Extremely high goals need to be established, in order to break paradigms and fully engage the participants' creativity.
7. Visual communication and "visual thinking" should be employed to establish a constructive, unambiguous environment.

   The Mapping approach and its materials require the participants to communicate using a visual symbol language. This has the effect of levelling the communication and eliminating the barriers of professional jargon. The maps show the process in question in its entirety and within its context. This has the effect of focusing discussion, reducing miscommunication and generating mutual understanding. It tends to increase openness to new ideas. The symbols encourage people to use their intuition and emotions. In many cases these have a greater impact on identifying and implementing a solution than does intellect alone.

   The participants' views of the process are discussed and the consensus is recorded on the map. People necessarily build on each other's ideas during map construction and


DISTRICT HEALTH SYSTEM TODAY
WEAK LOCAL INFRASTRUCTURE
HEALTH CENTER
Village
HEALTH STATION
School

THE HEALTH STRUCTURE MAKES COMMUNITIES PASSIVE RECIPIENTS OF SERVICES

1 DOMINANCE OF THE CENTRAL MINISTRIES INHIBITS TWO WAY COMMUNICATION AND ISOLATES THE PERIPHERAL HEALTH SERVICES AND THE COMMUNITY

2 FUNDING MECHANISMS PERPETUATE VERTICAL PROGRAMME STRUCTURES

3 VERTICAL PROGRAMME MANAGEMENT UNDERMINES THE BUILDING OF LOCAL CAPABILITIES

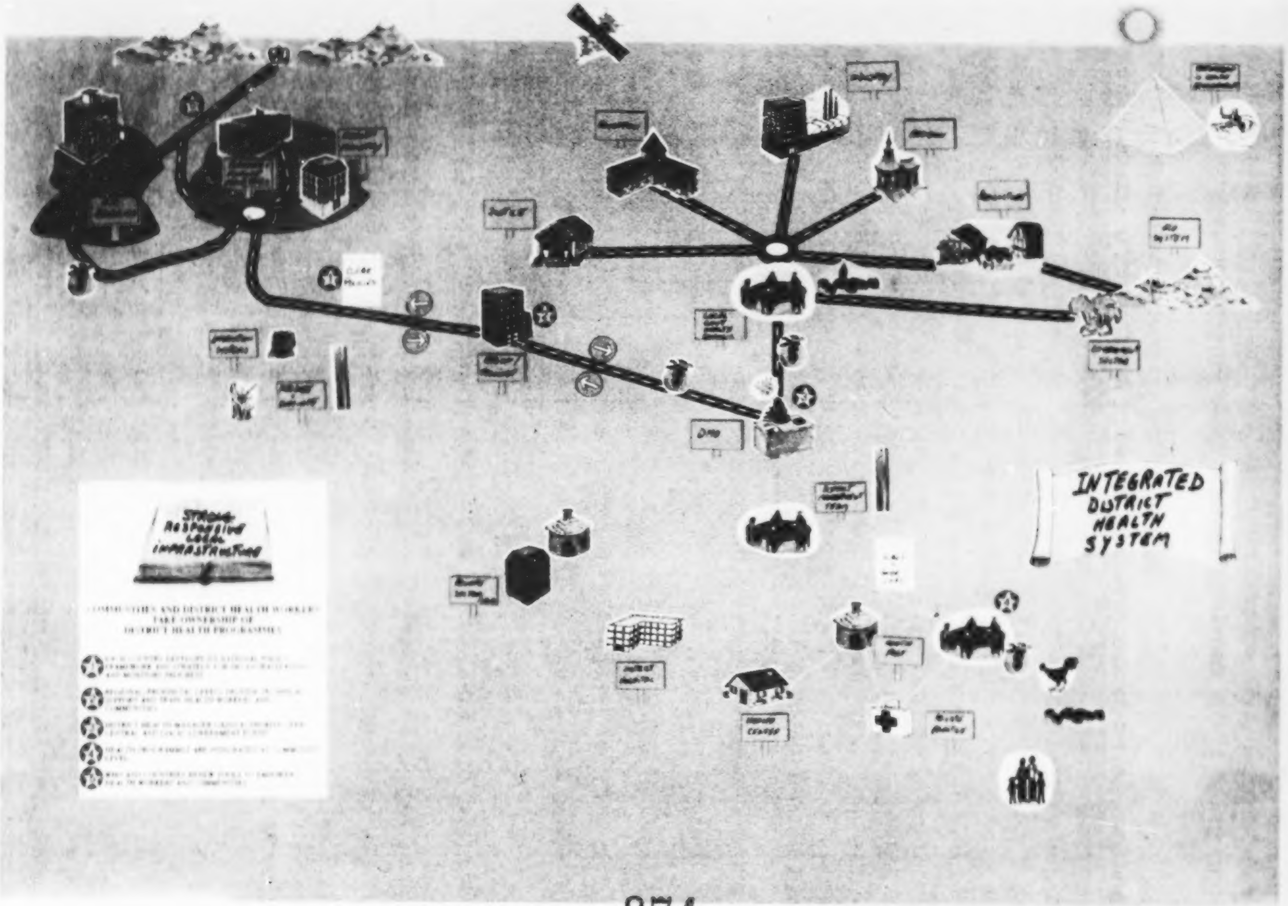
4 HOSPITALS ARE NOT INVOLVED IN PREVENTION AND HEALTH PROMOTION

5 LOCAL GOVERNMENT IS NOT / MARGINALLY INVOLVED IN HEALTH ISSUES

6 COMMUNITIES FIND GOVERNMENT SERVICES NOT AS EFFECTIVE AS THE PRIVATE SECTOR

Figure 1. Two maps constructed by participants at a discussion on change from the existing distict health care system to a rather more coordinated system

BEST COPY AVAILABLE


STRONG RESPONSIVE LOCAL INFRASTRUCTURE
COMMUNITIES AND DISTRICT HEALTH WORKERS TAKE OWNERSHIP OF DISTRICT HEALTH PROGRAMMES
INTEGRATED DISTRICT HEALTH SYSTEM

BEST COPY AVAILABLE

gain satisfaction from building the map (rather than from winning points in debates). The map building activity has a unifying effect on a group and the team spirit thus generated can be compared to that of members of a community gathering together to build a house.

Written output is limited to the recording of key points.

8. The end product should be displayed, and copies should be made for all participants. The completed, consolidated maps represent the views of all the stakeholders. As such, the maps represent a contract among the participants and serve to remind them of the commitments they have made. When maps are prominently displayed, they keep the group's attention focused on the issue, especially on the action items. A map with a brief narrative description is much clearer and accessible than a thick, written report.

   The existence of an efficient planning process tends to make people **want** to come together to solve problems. The teamwork spirit that develops when people build maps helps them to overcome their differences. When results are achieved quickly and people experience a net benefit for themselves, they tend to want to repeat the experience.

Example from Zambia

An example of such a workshop has been published (Dorros, 1993) quite recently. The workshop was held by the Government of the Republic of Zambia (GRZ). It applied the Mission Mapping™ process in a complex inter-sectoral application. Although the people and the tasks in this example were operating at a national level, the process and the observations are widely applicable.

Economic conditions in Zambia at the beginning of 1992 required a major reduction in government expenditure. The newly elected government wanted to develop a programme, management systems and specific projects that would lead to a full reform of the public sector. The GRZ charged its Cabinet office to develop the programme, with assistance from World Bank staff, to meet these objectives.

Full concurrence of all Ministries and aid agencies was seen as the key to gaining public support, financial aid and successfully implementing the programme of change. A large meeting was planned to include the permanent secretaries of most Government Ministries, local government officials and some aid workers. Representatives of the World Bank, UNDP, the British Overseas Development Agency (ODA) and other donor agencies were invited as observers. A total of about 50 people were asked to reserve a full week of their time to try to set a sound direction for the programme.

The planning team needed to bring together a very large group of people with different cultural and national backgrounds, widely differing objectives and experiences; a way to help government officials and donor agencies to understand the nature and depth of current problems; a method to stimulate fresh thinking about how to change 20 year old bureaucratic approaches; a way to keep participants' interest and enthusiasm through a long and complex analysis and to avoid the deadening effect of speech after speech; and a process that could help to define broad strategies that would then be cascaded throughout the government for detailed planning.

The team chose to use a Mission Mapping™ workshop to meet these needs. Their next task was to identify the public sector processes that needed reform and what maps the workshop would need to create. After some analysis, the key processes were determined to be: planning, budgetting and financial control; organisation, performance, evaluation and reward; and government operation in a decentralised environment.

The workshop was initiated by the Deputy Secretary to the Cabinet, who outlined the challenges facing the government. The group was broken into nine sub-groups of five or six. They built visual models of the processes, compared their views in plenary sessions and reached full consensus in most cases. The sequence of analysis was:
1. the current state of each process; 2. an ideal future vision for each, showing how it would function after all current problems had been solved and new objectives had been met; and 3. the path forward to achieve the vision for each process. During this stage, short, medium and long term actions were identified that included a comprehensive reform programme and defined terms of reference for module leaders and the overall programme coordinator.

The workshop was highly participative. Everyone had the opportunity to voice his or her opinions and help build the plan. Observers participated in map building but did not make presentations.

Beside helping the group to appreciate the realities of the situation, building and presenting the first maps provided a cathartic point. Participants used the map to air their past grievances and state their willingness to change.

In the second maps, the group generated fresh ideas, most notably for the intractable problem of how to move thousands of people out of government jobs without creating disastrous unemployment. The third maps, the path forward maps, gave participants the opportunity to make commitments to actions for change. Because donor agencies came to understand more clearly the local political situation they were able to see how they could contribute to the reform process.

Construction of the maps provided a springboard for mutual understanding, and teamwork reached unprecedented high levels. Donor agencies came to understand the problems from the government's point of view and deepened their respect for the government officials. The relationship paradigm between the international agencies and the government may have changed from donor-recipient to a partnership in problem solving.

The one week session brought about profound changes in the attitudes of the participants.

It yielded a consensus vision of how government could act as an enabler of economic development and not as a participant in the economy. Parts of the vision were dramatic departures from the current structure. Specific direction was given to particular follow-on projects.

Participants rated the workshop highly and expressed the view that further workshops with a wider set of participants would help in implementing the decisions.

Invitation for Wider Applications

The authors are continuing to apply, improve and extend the applicability of the method and the materials and would like to make them more widely accessible. International public health professionals may purchase Mission Mapping^{TM} materials on the same terms as WHO. A leader's guide and training are available. Broader use of the tools will help to reduce costs, so that the materials can be made more widely available in developing countries.

References

Dorros, G. (1993). Planning and management of change in health systems. *World Health Forum, 14, (1)*, 86-88.

Hope, A., & Timmel, S. (1989). *Training for transformation: A handbook for community workers.* Gweru, Zimbabwe: Mambo Press.

Srinivasan, L. (1990). *Tools for community participation: A manual for training trainers in participatory techniques.* New York, NY: PROWWESS/UNDP.

Annals of Community-Oriented Education
1993, Vol. 6, 291-300

STUDENT SELECTION

A Review of Examination Performance in the Faculty of Medicine, University of Gezira

Ahmed Awad Abdel-Hameed
University of Gezira
Wad Medani, Sudan

Abstract

In this study, examination records of 166 students who graduated from the Faculty of Medicine, University of Gezira (FMUG) are reviewed. Performance in medical school shows stronger correlation with Preparatory College grade points average (GPA) than with total secondary school certificate GPA which is the grade for admission to medical school. It is suggested that reconsideration of admission policies could provide more valid predictors for performance in medical school. Male students performed significantly better than females in Phases I and II (predominantly basic and paraclinical sciences), while female students excelled in the clerkships. Possible explanations for these gender differences are discussed. Grades of community-based courses show poor correlation with other grades, possibly because students are being graded as groups in these courses.

Introduction

Admission to medical schools in Sudan is based exclusively on academic performance in the Sudan High Secondary School Certificate (SHSSC) Science Division. Selection is centrally controlled at the national level by the Committee for Admission to Higher Education which admits applicants to each medical school based on their performance in the SHSSC examination. Currently, competition is based on the total grade points average (GPA) expressed as percentage. For science students this examination consists of a number of written tests (short questions and essays) in Arabic Language, Islamic Studies, English, Mathematics, Biology, Chemistry and Physics (Sudan, 1991). In other countries in the region, and in Sudan until recently, selection for medical school is made from applicants who have completed a common post-secondary (preparatory) year for all biological sciences in the university. The merits of each of these two systems is subject for debate. Proponents of direct admission to medial school think that the common preparatory year was unnecessary. Advocates of selection after the preliminary year regard performance in SHSSC as a poor predictor of student performance in a university setting. Several considerations call for constant review and evaluation of our policies for selection of medical students: 1. Admission to medical schools in Sudan is highly competitive.

Requests for reprints should be sent to A. Abdel-Hameed, University of Gezira, Faculty of Medicine, P.O. Box 20, Wad Medani, Sudan.

Annually there are about 20 eligible candidates for each place (Sudan, 1991). 2. In spite of scarce resources, training of doctors in Sudan is financed almost entirely by the government. This should call for cost-effectiveness in medical education. Thus the selection policy should ensure efficient throughput in medical school, as well as selecting those who are best suited for the practice of medicine in Sudan. 3. With the current policy of direct admission to the medical school from holders of SHSSC, certain questionable practices have evolved. A large number of SHSSC examinees attempt the examination repeatedly until they are able to score a grade that qualifies them for admission to the medical school. This has further undermined the fairness of this examination for students who attempt the examination for the first time and who have to compete with others who are repeating the examination. More than 60% of medical students in Sudan have made multiple attempts at the SHSSC examination before they were finally able to compete successfully for admission to the medical school. This gives rise to a growing concern that the current admission policy allows more repeaters of the SHSSC examination to be admitted, as no consideration is given to the number of attempts made by students at the SHSSC examination before they gain admission to the medical school.

The Faculty of Medicine University of Gezira (FMUG) has a problem-based, community-based and community-oriented approach to medical education. Various aspects of the FMUG programme have been evaluated (Seefeldt et al., 1989). The curriculum extends over 5 years; 10 semesters, with Summer sessions usually regarded as complementary to community courses in different semesters. The curriculum is divided into three phases: Phase I is spent in the Preparatory College, followed by Phases II and III which are spent in the Faculty of Medicine. During the period covered by the present study, the courses offered in the different phases were as follows:

Phase I (semesters 1 and 2): scientific English, chemistry, mathematics, zoology, physics, biochemistry, introduction to medicine. This phase is assessed by written tests (short answer questions and essays) in all courses, and practicals in chemistry, biochemistry, zoology and physics.

Phase II (semesters 3 to 7): A. Systems courses: e.g. Problems of the Respiratory System, etc. Each system course is assessed by an end-of-course examination consisting of multiple choice questions (MCQs), essay questions, objective-structured clinical examination (OSCE) and a clinical examination.

B. Community-based courses. Here students are usually assessed as groups, mainly based on reports that describe their field activities.

Phase III (semesters 8, 9 and 10: clerkships). Each clerkship is assessed by: MCQ, essays, OSCE and clinical examination.

All examination results are discussed by the relevant department, as well as by the Faculty Board and have to be approved by the University Senate. External examiners are used for all the clerkships. Evaluation of different assessment tools used in Gezira indicate satisfactory levels of reliability (Abdel-Hameed et al., 1992a, 1992b). Seven cohorts of students have so far graduated from the school.

The present communication presents a retrospective analysis of examination results for the four cohorts who graduated from the school in 1990, 1989, 1988 and 1987. The earlier three intakes were excluded because they were a-typical, due to the initial trials with the curriculum and teaching methods, although the learning objectives remained the same. This review was carried out to investigate: 1. predictive validity of SHSSC GPA for examination performance in the medical curriculum; 2. comparison of performance in community-based courses with performance in other subjects and with the final assessment prior to graduation; and 3. effect of student's sex on examination performance.

Materials and Methods

Examination records of the last four cohorts which graduated from the Faculty of Medicine, University of Gezira were analysed. Students who had transferred from other medical schools and students who had been admitted with qualifications other than Sudan High Secondary School Certificate (SHSSC) were excluded from the study (about 5%). Students' grades are usually recorded as progress grades in the form of a cumulative grade points average (CGPA) at the end of each semester. For the purpose of this study, course grades were regrouped and averaged to find GPA (grade points average) for Phase I (all courses), Phase II (system courses), Phase II (community-based courses) and Phase III (clerkships).

Correlation of SHSSC and CGPA in the Preparatory College year with student grades in medical school was tested by determining correlation coefficient and significance. Information on the number of attempts made by the students at the SHSSC examination was available for only two batches (89 students). Mean grades for students in these two batches who were admitted to the school after the first attemtp at SHSSC were compared with those who were admitted after multiple attempts. The effect of students sex was also assessed by comparing the mean grades scored by male and female students respectively. Tests for difference between means was carried out with ordinary student t-test. The final grade (CGPA 10) and the GPA for community-based courses were each tested for correlation with grades in different phases and different course groups. All statistical tests used the STATPAK computer programme, Indianapolis, USA.

Results

Table I compares the correlation of SHSSC grade and CGPA of the Preparatory College with different grades scored in the medical school. Weak correlation is seen between secondary school certificate (SHSSC) grade and CGPA at the end of Phases I, II and III. When grades were recalculated for individual phases correlation with SHSSC is still weak for Phases I and II, but no significant correlation was found with GPA for Phase III. Preparatory College CGPA shows stronger correlation with CGPA for Phases II and III and with GPA for course groups in Phases II and III.

Table I. Correlation of Secondary School Certificate grade and Preparatory College CGPA with different grades scored by 166 students graduated from Gezira Medical School

	Correlation coefficient and significance	
GRADE DEFINITION	**Secondary School Certificate GPA***	**Preparatory College CGPA****
Progress grades:		
1. CGPA semesters 1 and 2 (Preparatory College CGPA)	0.35 (P<0.0005)	--
2. CGPA semesters 1 to 7	0.36 (P<0.0005)	0.75 (P<0.0005)
3. CGPA semesters 1 to 10 (graduation CGPA)	0.23 (P<0.005)	0.62 (P<0.0005)
Recalculated grades:		
A. Phase II (semesters 3-7)		
1. GPA for all courses	0.31 (P<0.0005)	0.53 (P<0.0005)
2. GPA for community-based courses***	0.36 (P<0.0005)	0.42 (P<0.0005)
3. GPA for system courses	0.33 (P<0.0005)	0.50 (P<0.0005)
B. Phase III (semesters 8-10)	0.001 (NS)****	0.22 (P<0.005)

* GPA = Grade Points Average
**CGPA = Cumulative Grade Points Average
*** = Community-based courses are evaluated in groups
****NS = Not significant, P>0.05

Table II shows the mean CGPA at the end of the three phases as related to the number of attempts made by the student at the SHSSC examination before admission to the School. There are no significant differences associated with the number of attempts except for a significantly lower CGPA at the end of Phase II for students admitted after 3 attempts compared with those admitted after the first attempt ($P<0.05$).

Correlation of the final grade (CGPA 10) with the different grades scored by the students is shown in Table III. Correlation of the final grade is strongest with performance in clerkships (r=.78) and weakest with performance in community-based courses (r= 0.34).

Table II. Mean CGPA at the end of the three phases of medical school for students admitted after one, two and three attempts at SHSSC examination

Number of attempts	Number of students	CGPA Phase I	CGPA Phase II	CGPA Phase III
1	30 (32.5%)	3.03	3.01	2.89
2	50 (56.1%)	2.92	2.89	2.77
3	9 (11.4%)	2.6	2.65*	2.65

* mean CGPA significantly different from that for 1 attempt (P<0.05)

Table III. Correlation between final grade (CGPA* semester 10) and different grades scored by 166 students graduated from Gezira Medical School

GRADE DEFINITION	Correlation coefficient and significance	
A. Phase I:		
GPA** semesters 1 and 2 (Preparatory College CGPA)	0.62	(P<0.0005)
B. Phase II (semesters 3 to 7):		
1. GPA all courses	0.67	(P<0.0005)
2. GPA community-based courses	0.34	(P<0.0005)
3. GPA "system courses"	0.65	(P<0.0005)
C. Phase III (semesters 8 to 10, clerkships):	0.78	(P<0.0005)

* CGPA = Cumulative Grade Points Average

** GPA = Grade Points Average

*** = Community-based courses were assessed in groups

Correlation of grades in community-based courses with different course groups is shown in Table IV. There is no significant correlation between performance in community-based courses and performance in the clerkships, although significant but weak correlation is seen between community-based courses and courses in Phases II and III.

Table IV. Correlation between GPA for community-based courses and different grades scored by 166 students graduated from Gezira Medical School

GRADE DEFINITION	**Correlation coefficient and significance**	
A. Phase I:		
GPA** semesters 1 and 2 (Preparatory College CGPA)	0.42	(P<0.0005)
B. Phase II (semesters 3 to 7):		
1. GPA all courses	0.45	(P<0.0005)
2. GPA "system courses"	0.34	(P<0.0005)
C. Phase III (semesters 8 to 10, clerkships):	0.05	NS ***

* CGPA = Cumulative Grade Points Average
** GPA = Grade Points Average
*** NS = Not significant, P>0.05

Table V compares the mean grades obtained by male and female students. There is no significant difference between the sexes in their admission SHSSC grade. In the medical school grades male students scored higher CGPAs at the end of Phase I and Phase II, but there are no significant sex differences in the CGPA at the end of Phase III (graduation CGPA). When grades are recalculated the superior performance of male students in Phase II is more marked (P<0.0005) in the "system courses" but no significant differences are seen in the grades of community-based courses. In Phase III (semesters 8, 9 and 10-clerkships) the mean GPA for females is significantly higher than that for males (P<0.05).

Table V. Comparison of the mean grades scored by 129 male and 37 female medical students graduated from Gezira Medical School

GRADE DEFINITION	**MEAN GRADE SCORED**		
	males	**females**	**significance**
Secondary school certificate GPA (%)*	76.9	77.2	NS***
Progress grades:			
1. CGPA** semesters 1 and 2 (Preparatory College CGPA)	2.88	2.72	(P<0.05)
2. CGPA semester 1 to 7	2.89	2.67	(P<0.005)
3. CGPA semesters 1 to 10 (graduation CGPA)	2.80	2.78	NS***
Recalculated grades:			
A. Phase II (semesters 3 to 7):			
1. GPA all courses	2.90	2.67	(P<0.005)
2. GPA community-based courses ****	3.14	3.16	NS***
3. GPA "system courses"	2.73	2.41	(P<0.0005)
B. Phase III (GPA semesters 8 to 10, clerkships):	2.63	2.93	(P<0.05)

* GPA = Grade Points Average
** CGPA = Cumulative Grade Points Average
*** NS = Not significant, P>0.05
**** = Community-based courses were assessed in groups

Discussion

The present study does not directly address the predictive validity of selection criteria for identifying graduates suitable for the practice of medicine. However, an assessment of Gezira graduates in their housemanship (junior residency) year has shown high rating of their performance in cognitive, psychomotor and affective domains, suggesting concordance of the learning objectives of the school with skills and abilities required for medical practice in Sudan (Abdel-Rahim et al., 1992). The poor correlation between SHSSC grade and students' performance in the medical school in the present study is comparable to that reported in Saudi Arabia by El-Hazmi et al. (1987). In the United States correlation between premedical GPA and grades in the medical school were best in the first year 0.27, dropping to only 0.09 by the last year (Gough et al., 1963). Although the Medical Colleges Admission Test (MCAT) has provided an additional tool for selection of candidates, it did not show a high predictive validity either (Carline et al., 1983).

In the present study the stronger correlation of medical school grades with CGPA in the Preparatory College compared with SHSSC grade should call for reconsideration of our admission policies. Perhaps the institution of some sort of a premedical programme after high school and before selection to medical school should be considered. Due to economic constraints and because of the examination-oriented nature of instruction in secondary schools in Sudan, science students receive only nominal practical laboratory training before they are admitted to university. In the preparatory year the students get their first proper instruction and assessment in laboratory skills.

The present data show no significant differences in academic performance between students admitted after a single attempt and those admitted after multiple attempts at the SHSSC examination. However, the number of students included in this part of the study is probably too small. We would suggest that this aspect be investigated on a wider scale. Poor correlation of grades in community-based courses with other subjects could be explained by the fact that in community-based courses students are graded as groups rather than as individuals.

Cognitive and behavioural differences between the sexes could reflect as differences in academic performance (Garai et al., 1968). These differences in performance have partly been explained by specific differences in aptitude. For example, while girls are reported to excel over boys in verbal abilities, boys perform better in visual-spatial tests and in mathematical tests (Pattison et al., 1984; Hogrebe et al., 1985). Few studies have explored gender differences in academic performance in medical students. After analysis of examination results of second year medical students Pritchard (1988) reported superior performance of women medical students compared to their male classmates. A 10-year review in Saudi Arabia showed superior performance of male students in paraclinical subjects, whereas women students performed better in clinical subjects (El-Hazmi et al., 1987).

In the present study male students performed better than their female colleagues in Phases I and II, while females excelled in the clerkships. This could possibly be attributed to gender differences in aptitude and subject preferences by the students. In addition, we believe that social and psychological factors could affect academic performance of female students in the first phases of the curriculum. It has been suggested that medicine is still male-centred and that the female medical student may suffer from a measure of role conflict (Nadelson et al., 1972; Loyd et al., 1981; Sharpiro et al., 1988). Hoferek and Sarnowski (1981) found that female medical students report more feelings of isolation and discomfort compared with their male peers. Even in societies with a large measure of integration of the sexes, a shift to co-education could be "a radical change in environment for both boys and girls who mature in different ways and phases" (Gilder, 1975). In Sudan, the sexes are segregated in secondary schools and in society at large, medical students get their first experience of co-education when they are admitted to the medical school. Such a change could require a considerable effort to adapt, specially for the small number of females admitted. Hoferek and Sarnowski (1981) proposed that active measures be taken to alleviate feelings of isolation in medical students. We would suggest further studies to investigate adjustment of female medical students to the medical school environment in our setting. This could have a bearing not only on academic performance but also on development of professional identity, which is an integral part of medical education.

References

Abdel-Hameed, A.A., Ahmed, B.O., El-Amin, W.O., & El-Khazin, A. (1992a). *Appraisal of students attitudes and correlation of performance in multiple choice questions and essays in the Faculty of Medicine, University of Gezira* (presented at the International Symposium on Student Assessment, Penang, Malaysia, January 10-15, 1993).

Abdel-Hameed, A.A., & El-Mubarak. (1992b). *Comparison of attitudes of students to different methods of assessment in English-medium and Arabic-medium in Omdurman Islamic University and Gezira Medical School* (presented at the International Symposium on Student Assessment, Penang, Malaysia, January 10-15, 1993).

Abdel-Rahim, I.M., Mustafa, A.E., & Ahmed, B.O. (1992). Performance evaluation of graduates from a community-based curriculum: The housemanship period at Gezira. *Medical Education, 26,* 233-240.

Carline, J.D., Cullen, T.J., Scott, C.S., Shannon, N.F., & Schadd, D. (1983). Predicting performance during clinical years from the New Medical College Admission Test. *Journal of Medical Education, 58,* 18-25.

El-Hazmi, M.A.F., Tekian, A.D., El-Mahdy, S., & Lambourne, A. (1987). Performance of men and women medical students at King Saud University, Riyadh: A 10 year retrospective study. *Medical Education, 21,* 358-361.

Garai, J.E., & Scheinfeld, A. (1968). Sex differences in mental and behavioural traits. *Genetic Psychology Monographs, 77,* 169-299.

Gilder, G. (1975). *Sexual suicide.* New York, NY: Bantam Book.

Gough, H.G., Hall, W.B., & Harris, R.E. (1963). Admission procedures as forecasts of performance in medical training. *Journal of Medical Education, 38,* 983-998.

Hogrebe, M.C., Nist, S.L., & Newman, I. (1985). Are there gender differences in reading achievement? An investigation using high school and beyond data. *Journal of Educational Psychology, 76,* 678-679.

Hoferek, M.J., & Sarnowski, A.A. (1981). Feelings of loneliness in women medical students. *Journal of Medical Education, 56*, 397-403.

Loyd, C., & Cartnell, N. (1981). Sex differences in medical students mental health. *American Journal of Psychiatry, 138*, 1346-1351.

Nadelson, C., & Nothman, M. (1972). The woman physician. *Journal of Medical Education, 47*, 176-183.

Pattison, P., & Grieve, N. (1984). Do spatial skills contribute to sex differences in different types of mathematical problems? *Journal of Educational Psychology, 76*, 678-679.

Pritchard, D.J. (1988). Effects of sex and alphabetical listing on examination performance of medical students. *Medical Education, 22*, 205-210.

Seefeldt, M., Ahmed, B.O., Mustafa, A.E., Ali, M.M., & Ali, G.M. (1989). The approach and major findings of the programme evaluation of the Gezira University Medical School innovation, tenth year. *EMR Health Service Journal (WHO/EMRO), 6*, 32-38.

Sharpiro, M.C., Westen, J.S., & Anderson, D.S. (1988). Career preference and career outcomes of Australian medical students. *Medical Education, 22*, 214-221.

Sudan (1991). *Statistical Reports*. Khartoum, Sudan: Committee for Admission to Higher Education.

Annals of Community-Oriented Education
1993, Vol. 6, 301-310

CAREER CHOICE

Career Preferences of Medical Students in a Community-Oriented Medical School

Rogayah Jaafar and Zulkifli Ahmad
Universiti Sains Malaysia
Kelantan, Malaysia

Abstract

A number of factors play an important role in influencing students' choices of careers after graduation. These factors include personality variables, beliefs about the social attractiveness of the specialty, vocational interest, and quality of the teaching programme. In a community-oriented medical school with the aim to graduate students able to identify themselves as members of the health care teams and the people, personality characteristics, the social milieu of the medical school and the role of tutors as models in professional socialisation play a role in career preferences amongst its graduating students.

This paper describes a base line study with the fifth and sixth cohorts of final year students of the School of Medical Sciences, Universiti Sains Malaysia. Results of the study and implications for future direction of the school's curriculum are discussed.

Introduction

Despite the homogeneity of the student body and their exposure to similar curricula, graduates become involved in vocations that are sharply dissimilar. How does this happen and what are the factors that account for the selection of a particular career?

Factors that have been the subject of studies are personality variables, beliefs about the social attractiveness of the specialty, vocational interest, and quality of the teaching programme.

The period at the medical school reinforces some of these factors, and a large proportion of students begin to form a decision concerning their future careers (Dobson, 1986). Hutt et al. (1981) noted that 28% of the graduates they surveyed made their decisions before or during their medical school. Parkhouse et al. (1983) noted that pre-registration surveys indicated that 22.1 - 25.7% had "definitely" made a career choice while 47.4 - 51.2% had "probably" made up their minds about a career. Other authors have placed emphasis on a variety of aspects. These included personality characteristics (Schumacher, 1964; Walton, 1969), the social milieu of the medical school (Lewis, 1961; Russel, 1975), the quality of the teaching programme (Nielsen, 1980; Spiegel, 1981), and the role of tutors as model in professional socialisation (Shuval and Alder, 1980).

Requests for reprints should be sent to R. Jaafar, Universiti Sains Malaysia, School of Medical Sciences, Department of Medical Education, 16150 Kubang Kerian, Kelantan, Malaysia.

It is thus important for medical schools to look into their own medical students' career preferences and identify the factors involved in their own particular context. It is all the more important to do so for medical schools in developing countries where few studies have been carried out and where health manpower planning for certain specialties is a major priority.

Background

The School of Medical Sciences, Universiti Sains Malaysia was established in 1979 as the third medical school in Malaysia. It is the first medical school in the country that adopted an innovative curriculum. It features integration, a problem-based learning approach, and community orientation. It is committed to producing community-oriented practitioners who are able to look at problems holistically and apply solutions at the levels of the individuals and the community. The School and its University Teaching Hospital are purposely based in Kelantan which is situated on the more rural north eastern coast of the country. To date, the school has graduated seven cohorts of doctors.

Community orientation of the medical students is practised from the first to the final year of the five years undergraduate curriculum through the Community and Family Case Study (CFCS) Programme (Jaafar et al., 1990) which is labelled as the community medicine track in our Curriculum Plan (Appendix). CFCS provides the students with experiential learning in a holistic and multidisciplinary approach to patient care. It serves to supplement what is taught in the wards through supervised exposure to actual situations in the family and community.

Rationale of the Study

Malaysia continues to experience a shortage of doctors, particularly in areas such as rural primary health care and preventive medicine. Service specialties, such as anaesthesiology, radiology and pathology, face similar shortages. It is thus important to identify the factors that influence the career preferences of medical graduates as a first step to improve the situation.

The present study serves as a baseline study for the School of Medical Sciences to identify the factors that influence career decisions of USM medical graduates. The study will also help to assess whether these factors are in line with the school's philosophy. Findings of the study can thus be used in reviewing the current status and future directions of the curriculum.

The results from this study will be of great value in guiding future studies into one or more specific factors that have been identified in the present study. The match between career preferences amongst our male and female students and their actual career after graduation is important, as more than half of our students are women, yet the specialisation pool in the country reflects a male bias.

The study may also generate further inquiries into the effect of the sociological background of our medical students, in particular their hometown and early schooling experiences, on choice of practice location. The additional information may influence the criteria for the selection of students to ensure a more balanced distribution of the doctor-patient ratio between urban and rural areas in Malaysia.

Objectives of the Study

The objective were to:
identify career preferences of the fifth and sixth cohorts of USM medical graduates;
identify factors, classified under the following broad categories, which influence career preferences of these graduates

i. background of graduates
ii. personal attributes of graduates
iii. social milieu of the medical school
iv. social attractiveness of the vocation chosen
v. type of practice location.

Method

Respondents in this study were the one hundred and forty nine members of the fifth and sixth cohorts of final year medical students, 71 students in 1990 and 78 students in 1991. Students' choices and preferences of careers after graduation were obtained through the administration of a structured questionnaire in a one hour afternoon sitting, about a month before students were to graduate. The responce rate was eighty five percent.

Profile of Respondents

Of the 149 respondents, 91 (61%) were female students, and 58 (39%) were male students. A majority of the students (97%) were in the 24-26 year age group.
Of the one hundred and twelve students who were still single, sixty six were female while forty six were males. Eleven students were engaged to be married (9 females and 2 males) while twenty three were married (15 females and 8 males). Of the twenty three married students, six had one child each, and one had two children.

Findings

At the time of the enquiry eighty five respondents were still undecided on their choice of specialisation. Of the sixty four respondents who had made their choice, twelve were certain, while fifty two were not absolutely certain of their career choices.
For those who had decided on their career, the chosen disciplines were, in order of popularity, Obstetrics and Gynaecology (21), Surgery (14), Paediatrics (12), Medicine (11), Psychiatry (3), Community Medicine (2), and General Practice (1). None of the respondents had selected Anaesthesiology, Radiology or other laboratory disciplines (Table I).

Table I. Choice of career by students who had made a decision

Discipline	No. of Students
Obstetrics & Gynaecology	21
Surgery	14
Paediatrics	12
Medicine	11
Psychiatry	3
Community Medicine	2
General Practice	1
Anaesthesiology	0
Pathology	0
Radiology	0
Hospital Administration	0

A similar pattern was seen in the career choices of students who had not yet made a decision but were asked to select their preferred vocation from a listing of disciplines provided in the questionnaire. Clinical disciplines, such as Medicine, Obstetrics & Gynaecology, Paediatrics and Surgery, appeared to be the preferred careers when compared to the laboratory based disciplines and the more administrative vocations such as General Practice and Hospital Administration. Table II highlights the career selected by these students in relation to their first, second and third choice of specialisation.

Table II. Career preference of students who had not yet chosen a career

Disciplines	1st choice	2nd choice	3rd choice
Medicine	22	30	15
Surgery	14	17	7
Paediatrics	21	21	17
Obstetrics & Gynaecology	25	15	16
Anaesthesiology	0	1	1
Psychiatry	0	1	3
Pathology	0	0	1
Radiology	0	0	0
Community Medicine	8	3	7
General Practice	6	6	16
Hospital Administration	2	2	7

When asked about factors which were important in determining their choice of career, a majority students selected "ability to have direct contact with patients" and "opportunities to teach" as very important career considerations (Table III).

Table III. Factors determining choice of career

Factors	**Scores**				
	Not important			**Very important**	
Ability to have direct contact with patients	2	1	21	58	67
Offering better financial rewards	9	33	55	39	13
Fixed hours of work	6	31	70	32	10
Higher social status	12	47	68	18	4
Opportunities for research	8	32	64	35	10
Opportunities for teaching	4	16	59	52	18

Major reasons for a particular career choice were interest and enjoyment, career prospects, as well as clinical orientation of the specialty (Table IV).

Table IV. Reasons for choice of career

	No. responces	
	YES	**NO**
Interest/enjoyment in the specialty	147	2
The specialty is clinical in nature	137	12
The specialty offers a variety of work	117	32
Ability to work with a particular group of patients	110	39
Better career prospects	110	32
Familiarity with the nature of work in the specialty	103	46
Ability to do community work	99	50
Marriage and family considerations	92	57

In line with their preferred career in clinically orientated specialties, a majority selected General Hospitals (as clinical consultants) with a smaller number considering a University Hospital (as clinical lecturer) to be their preferred vocational location (Table V).

Table V. Choice of location of practice

Location	Choices		
	1st.	2nd.	3rd.
Clinical Consultant in a General Hospital e.g. Physician, Surgeon, Paediatrician	91	15	10
Clinical Lecturer in a University Hospital	19	43	18
Non-Clinical Lecturer in a University Hospital	9	8	13
Private Clinic	8	11	34
Private Medical Centre/Hospital	7	30	23
Health Officer in a Health Office/Clinic	7	10	10
Service Consultant in a General Hospital e.g. Radiologist, Pathologist, Anaesthesiologist	2	14	7
Medical Officer in the Armed Forces	2	3	6
Administrator in a Hospital	1	8	11

When asked to select a permanent place of work, most respondents picked a state capital as their first choice followed by Kuala Lumpur, the federal capital. Only ten students considered working overseas. When asked specifically whether they preferred to work in their hometowns, 77% students responded YES, 8% said NO, while 14% said it did not matter. Tables VIa and VIb show the students' selection of place of work.

Table VIa. Choices of permanent place of work

Location of Work Place	Choices		
	1st.	2nd.	3rd.
Kuala Lumpur (capital city)	24	24	16
Kota Bahru (USM Hospital location)	19	12	4
State Capital	77	43	20
District	10	41	28
Anywhere in Malaysia	17	13	43
Overseas	1	2	7

Table VIb. Preference for working in home town

Preference	**No. responces**
Hometown	115
Not hometown	12
Anywhere, no preference	21

Discussion

The findings from this study show some interesting characteristics of the career preferences of USM medical students. The respondents represent a typical profile of the graduating doctors of the three medical schools in the country with a student population which is predominantly female in the 24 to 26 year age group bracket.

While the medical school places heavy emphasis on community orientation in its integrated and problem-based curriculum, this study shows that a majority of students, like most students in traditional medical schools, still opt for hospital and clinical disciplines. Again, as many studies in the West have shown, students before graduation are not attracted to laboratory-based disciplines. In line with their clinically orientated career choices, clinical and academic appointments in teaching and general hospitals are prime choices for vocational settings.

These findings prompt some provoking thoughts as to whether our community-oriented educational programme does really have an impact on career choices of our medical students and whether our Community and Family Case Study Programme (CFCS) actually provides the right orientation towards primary health care and public health vocations. Although a great deal of material, as well as faculty resources have been channelled into the CFCS programme, more emphasis should perhaps be placed on the availability of role models and appropriate facilities in the community. A review of students' and faculty's perceptions of the value and attractiveness of this aspect of the undergraduate medical programme is warranted. More importantly, in addition to our routine in-house evaluation of the community-oriented programme it is perhaps time to arrange for an external evaluation.

However, education alone cannot be expected to be the sole influence on career choices and eventual vocational decisions of medical students. Family pressure, economic and financial imperatives, general opinion about practice in rural settings, facilities and resources for satisfying practice and acceptable lifestyle and income, as well as opportunities for career development are among the many other real issues that young doctors need to consider in deciding their choices as well as location of vocational practice.

Yet, that our students elect factors such as "ability to have direct contact and to work with a particular group of people" as important considerations for selecting career choices does perhaps indicate that we are on the right path to grooming future doctors who will be more concerned and show greater empathy with the "patient" than to the "disease".

Another interesting finding was the high score for Obstetrics & Gynaecology as the first career choice, even though it was considered the most hectic and challenging discipline. This is not surprising, as a majority the respondents were female students, 42 out of 91 female students selected Obstetrics & Gynaecology as a preferred vocation. However, our Post Graduate Training Programme gender profile does not support this picture. Again it is imperative to address this mismatch between the career choices of female students and their actual future vocations in the field. Further research is needed to assess the real barriers that medical students, particularly female students, encounter in realising their preferred careers.

That our students prefer state capitals and their own home towns as places of work suggests that selection procedures may need to recruit a greater number of students from the less well served rural states. This suggestion would need the full support and approval of the Ministries of Health and Education.

Problems and Limitations

One of the major challenges of questionnaires or interviews is to ensure context and construct validity. Part of the questionnaire provided some cueing in the statements offered as choices. This was deliberate to receive feedback based on actual vocational options available and applicable in Malaysia. Responses were also sought to indicators of career aspirations as a basis for comparison with students of a more traditional medical school. On reflection, this approach may have had a restrictive effect on some of the students' own perceptions and thoughts.

Conclusion

The reality in Malaysia with regards to career choices and eventual specialisation has not been fully explored. Our observations tend to point to a more accurate correlation among male students as compared to female students. This study is thus only the first step in exploring that linkage. A natural sequence to the study will be to follow the career pathways of the same group of students for the subsequent five years. A comparison of the findings of the above study with similar studies in the other two medical schools in Malaysia would provide a useful national profile.

While the findings do not reflect the full aspirations of our undergraduate community-oriented medical education programme, it highlights the need for us to constantly reexamine the adequacy of our community orientation and the extent to which the whole curriculum supports or cancels that endeavour. However, we must also recognise that even the best and most effective education is but one of the many elements that affect students' career choices and graduates' career decisions.

References

Dobson, B. (1986). Choosing a career: The undergraduate dilemma. *Medical Teacher, 8 (1)*, 75-80.

Hutt, R., Parson, D., & Pearson, S. (1981). The timing of and reasons for doctors' career decisions. *Health Trends, 13*, 17-20.

Jaafar, R., & Hassan, M.H.M. (1990). Community and family case study programme at Universiti Sains Malaysia: An experience in self-directed contract learning. *Annals of Community-Oriented Education, Vol. 3, (II)*, 129-132. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Lewis, A.J. (1961). *Psychiatric education and training in psychiatrie der Gegenwart*. Berlin, Germany: Springer-Verlag.

Nielsen, A. (1980). Choosing psychiatry: The importance of psychiatric education in medical school. *American Journal of Psychiatry, 137*, 428-431.

Parkhouse, J., Campbell, M.G., & Parkhouse, H.F. (1983). Career preferences of doctors qualifying in 1974-80: A comparison of pre-registration findings. *Health Trends, 15*, 29-35.

Russel, G.F.M. (1975). *Psychiatric education and training*. Berlin, Germany: Springer-Verlag.

Schumacher, C.F. (1964). Personal characteristics of students choosing different types of medical careers. *Journal of Medical Education, 39*, 278-288.

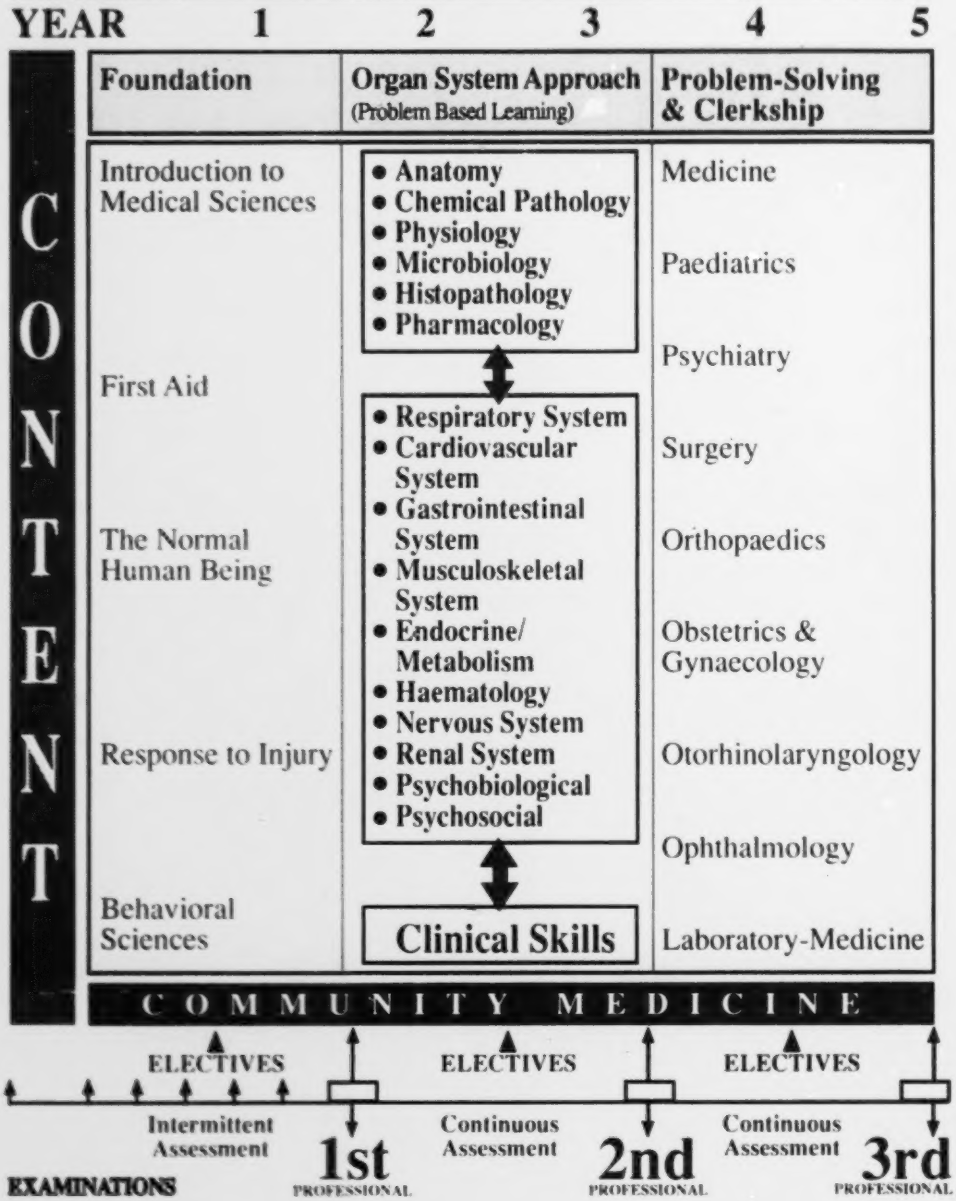
Shuval, J.T., & Alder, I. (1980). The roles of models in professional socialization. *Social Science and Medicine, 14A*, 5-14.

Spiegel, D.A. (1981). Motivating the students in psychiatric posting. *Journal of Medical Education, 56*, 593-600.

Walton, H.J. (1969). Personality correlates of a career interest in psychiatry. *British Journal of Psychiatry, 155*, 211-219.

Appendix

PLAN OF THE USM MEDICAL SCHOOL CURRICULUM



YEAR 1	2 3	4 5
Foundation	**Organ System Approach** (Problem Based Learning)	**Problem-Solving & Clerkship**
Introduction to Medical Sciences First Aid The Normal Human Being Response to Injury Behavioral Sciences	• Anatomy • Chemical Pathology • Physiology • Microbiology • Histopathology • Pharmacology ↕ • Respiratory System • Cardiovascular System • Gastrointestinal System • Musculoskeletal System • Endocrine/ Metabolism • Haematology • Nervous System • Renal System • Psychobiological • Psychosocial ↕ Clinical Skills	Medicine Paediatrics Psychiatry Surgery Orthopaedics Obstetrics & Gynaecology Otorhinolaryngology Ophthalmology Laboratory-Medicine

CONTENT
COMMUNITY MEDICINE
ELECTIVES
ELECTIVES
ELECTIVES
Intermittent Assessment
Continuous Assessment
Continuous Assessment
EXAMINATIONS
1st PROFESSIONAL
2nd PROFESSIONAL
3rd PROFESSIONAL

Annals of Community-Oriented Education
1993, Vol. 6, 311-319

TEACHER TRAINING

Training Tutors in a Problem-based Learning Curriculum

Margareta Koch
University of Linköping
Linköping, Sweden

Abstract

The two day tutor training course of the Faculty of Health Sciences aims to develop tutors' recognition of how students conduct their group work in three distinct ways: dealing with the content of the problem, the process of tackling the problem and conducting their problem-based learning, and handling interaction within the group. This should help tutors to recognize problems as they arise at any of these three levels of learning and to help their group appropriately. Tutors are also assisted to develop an awareness of the way students think and reason, so that they can help them to become independent learners. A third aim is to enable tutors to make good use of positive and negative feedback as it applies to their students and to themselves; they learn to see themselves as others see them.

Introduction

In 1986 the Faculty of Medicine became a Faculty of Health Sciences with programmes for six professions. The curricula use problem-based learning, and the first semester includes a multiprofessional course for medical students and students of laboratory technology, nursing, occupational therapy, physiotherapy and social work. Some 400 students are involved, as approximately 200 join the Faculty at the start of the first semester and a further 200 students at the beginning of the second semester.

The first ten weeks of the first semester are devoted to a multiprofessional study of *Man in Society* which deals with psychosocial development throughout life and the relationship between individuals and their society in the context of psychological, social and medical problems. From the very start mixed groups of six to eight student with a tutor practise problem-based learning (PBL). Students and tutor discuss how the group will function and how the process of problem-based learning is to be conducted. This leads to the formulation of a contract.
The students are given a list of problems or "cases" from which they can decide the sequence in which the group will work through the problems. The students are given the learning objectives for the entire semester but none for individual problems. In a typical one and a half hour session the group will use the seven step approach developed at the Rijksuniversiteit Limburg at Maastricht in the Netherlands (Schmidt, 1983). The students

---

Requests for reprints should be sent to M. Koch, University of Linköping, Faculty of Health Sciences, S-58183, Linköping Sweden.

will come fresh and unprepared to the problem but share previous knowledge and experience in order to progress with the problem. Quite soon they will identify what they do not understand and proceed to formulate their own learning objectives. Before the next session in the same week they will study individually and start the next session by sharing what they have learned and applying this to the original problem. The last half hour will then be used to explore a new problem and to evaluate the week's work by the group, its individual members and the tutor. In this way a group can usually work with two problems in one week.

After the first ten weeks the medical students, will move on to an integrated, problem-based learning organ systems course. Two tutors, a basic scientist and a laboratory-based physician will be responsible for one group for a 20 week semester. During this time they will alternate as tutor every three to five weeks. The tutor's role is to assist the students with the process of managing their approach to the problem and progressing through the steps of problem-based learning. The tutor is not to become involved with the basic or clinical science content of the problem, but to facilitate the dynamics of the group's discussion.

There are some one hundred tutors in the medical curriculum, with approximately twenty to thirty new tutors in any one academic year. For the other curricula the number of tutors is also about one hundred in total, with some ten new tutors each year.

The Training Course

Many teachers find the role of the tutor unfamiliar and difficult, so that opportunities for becoming familiar with this task have to be made available. The Linköping training programme was started in 1987. It has been continued unchanged as it proved successful in its original form during some fifty subsequent courses. Approximately eight such courses are offered each year for teachers from the Faculty in Linköping and from other faculties that are in the process of establishing PBL curricula. The reputation of the course has ensured that attendance does not have to be mandatory for new tutors.

The two days of the course are held in the town but away from the teaching hospital and lasts from 8:30 a.m. to 5:30 p.m. with a break for lunch and coffee. There are eight participants, frequently from a range of different professions. Two family counsellors and an educationalist are the staff for the course. The latter also acts as coordinator responsible for the course as a whole, the introduction, video recording and for guiding the participants in their reflection on experiences gained during roll play sessions.

The course room is so arranged that any possible confusion between a role play session and the subsequent discussion session is minimized. Figure 1 shows how six participants are seated to play the role of students in tackling a problem in a problem-based tutorial session. The seventh participant acts as the tutor and sits with one of the family counsellors, while the eighth participant is an observer and sits together with the other family counsellor.

During the discussion session the participants move to the other table together with the educationalist.

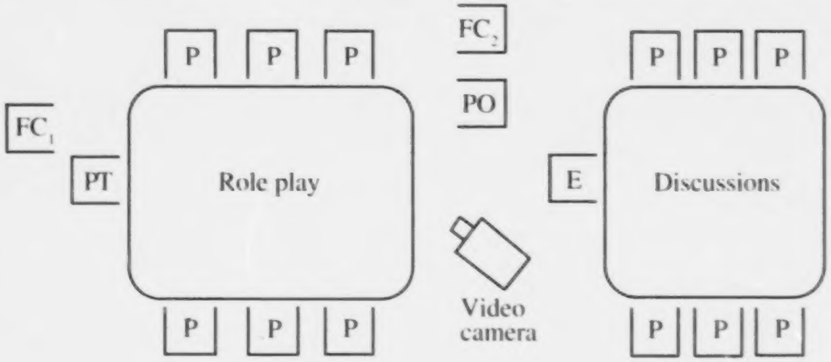


Figure 1. Arrangement of tables in the course room

For role play session: PT = participant role playing the PBL tutor
FC$_1$ = family counsellor acting as supervisor for PT
P = participants role playing as students
FC$_2$ = family counsellor acting as supervisor for PO
PO = participant acting as observer
For discussion session: E = educationalist
P = participants who had role played as students

The Training Cycle

After the introductory session on the first day, one of the eight participants takes up the role of tutor and conducts a problem-based learning session with six participants who adopt the role of students. During this period of 45 minutes the eighth participant sits on one side as an observer.

At the end of this period the observer becomes the next tutor, and the first tutor now becomes the observer.

Next, when the second period of 45 minutes has come to an end, the two participants who acted as tutors will leave the room with their respective family counsellor/supervisor for a 30 minute feedback session with the video tape recording of their tutorship.

At the same time, the educationalist has a feedback session with the six participants who acted as students.

This cycle is repeated during the remainder of the two days, so that every participant can experience the role of tutor.

The simulations are made as congruent as possible with the actual experiences of the students. So, for example, the participants also agree a contract on how they will participate with each other during the two days. The problems and objectives are taken directly from those of the ten week course on *Man and Society*. Thus none of the participants can be expected to be expert in so wide a range of aspects. The group adopts the seven steps of the PBL process that is practised by student groups, and each session ends with a short period of feedback to the tutor. This corresponds with Kolb's (1984) circular model learning style (Fig.2). Actual experiences are followed by reflection, abstraction and the testing of new skills and thinking.

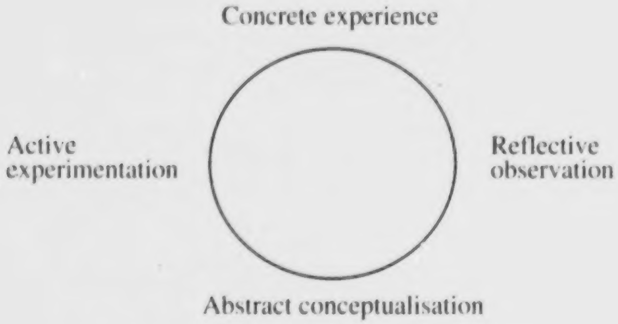


Figure 2. Learning style, after David A. Kolb

Role playing as tutor

The session starts with a discussion between the tutor and his or her family counsellor in the role of supervisor, in order to identify suitable foci for supervision. When role play commences, the tutor can test her/his ideas and intentions and observe the effect on the group's work and its dynamics. The tutor can "freeze" (time out) the role play at any time, in order to seek advice from the supervisor, e.g. "what should I do now?".

The supervisor, too, may "freeze" the role play in order to offer advice or to point out the effects of the tutor's interventions. All this gives the tutor an opportunity to consider what has happened and how s/he may help or hinder the work of the group.

The observer - the next tutor

This participant sits, together with the other family counsellor, to one side of the role play group. As the observer is not part of the group, s/he has a splendid opportunity to observe the group and its tutor - the work of the group, the group dynamics, and the influence of the tutor. The family counsellor can point out what the untrained eyes and ears of the observer may have missed - the different tutorial styles and their effect on the work of the group. As the next tutor the observer is offered a splendid opportunity for reflective observation.

The participants in the group

Each of the six participants will experience the forces that act on the group process. They will see how different actions on the part of the tutor help or hinder what the group is doing. In this way these future tutors will experience the PBL process from the students' point of view and learn by experience how the tutor can best assist the group.

This training session is not without problems of its own. When the work of the group is interrupted - when either the tutor or the supervising family counsellor "freeze" the session, the dynamics of the group and its work are interrupted. Also, the group will witness the discussion beteeen tutor and supervisor. Not only is the group not to react to what they hear by altering their subsequent activities, they are also debarred from joining in the discussion between tutor and supervisor - a frustrating and possibly confusing experience. However, when the tutor's session comes to an end, the remaining five minutes of the forty-five minute period are devoted to feedback from the group to the tutor. This calls for constructive comment and a sharing of individual experiences and perceptions, also recorded on the video tape.

Anyone who is not used to role play would be surprised to witness the strength of emotion that can be generated on these occasions.

Feedback session for the tutor

The next thirty minutes are spent by each of the two tutors and their respective supervising family counsellor in separate rooms to review the previous forty-five minutes with the help of their video recording. This is a highly valued experience, when the tutor can become aware of his or her behaviour and the effect on the group. This is amplified by the supervisor's reflections on strengths and constraints and how the personal style of the tutor can be enhanced in its effectiveness. The tutor can follow the development of the group process, and the supervisor can assist the tutor to become aware of the group's dynamics which s/he might not have recognized during the actual session.

Each feedback session will have a different focus to suit the needs of the tutor and how ready the tutor is emotionally to accept advice and counselling.

Feedback within the group

While the two tutors review their respective video tapes, the group is led by the educationalist in a review of the group's experiences with the two tutors. These experiences form an important basis for reflection, so that abstract conceptualization can be backed by concrete events. During this feedback session, educational issues and questions related to methods are frequently discussed, based on notes made during the two previous role play sessions.

Such issues or questions may come up for discussion on more than one occasion because the composition of the group changes every time when the role of tutor is handed over to a different pair of participants and the previous pair of tutors become again members of the group.

Aspects to be Considered in the Tutor Training Course

Systemic and communication theories form the base for the design of the course and feedback, so that the participants are encouraged to generate their own conclusions rather than be faced with a collection of standard solutions. This conforms with the educational philosophy that participants should be assisted individually according to their needs and stage of development.

The participants need to come to recognize three distinct components in the PBL process: *content, method*, and *process*. In order to be able to be of real help to the group the tutor must be able to diagnose accurately the component in which the work of the group is not functioning satisfactorily.
The content represents the facts and information, concerned with the "problem", which the students will acquire in order to reach the objectives of the semester. The relationship between the objectives and the design of the "problems" ensures that the aims of the curriculum will be achieved.

Methods are here the educational tools that are used for problem- solving and problem-based learning. Thus tutor and students need to bear in mind not only the seven steps of PBL (Schmidt, 1983), but also the objectives, and, indeed, the contract which the students agreed among each other in the group.

The process is how the students work together and with the tutor, and the dynamics within the group. While the participants in the role play group are usually well aware of *content*, they are rather less conscious of *method* and *process*. They will frequently not notice how lack of agreement on how to proceed within the group or how their interaction with each other obstruct progress with the "problem".

The tutor, who does not participate in the group's discussions, can take a dispassionate view and concentrate more on *process* and thus perceive difficulties and obstacles to smooth progress. The tutor's task is then to make the group aware of such obstacles. However, it is the group's responsibility to manage such difficulties once they have been identified. A tutor who says "we" takes on too much responsibility; to say "you" to the group helps to distance the tutor and to lay the responsibility for action on the group.

If the tutor becomes involved with *content*, in order to help the group, this is frequently experienced as a hindrance by the students. They may perceive this as being shown "the right way" and see this as loosing responsibility for their own learning; they are unwilling to resume a passive, listening role. Such encroachment may be countered by open resentment or by ignoring the tutor.

But to return to the simulation exercises in the course for tutors, the participants will be fairly uncertain at the start about how to work with each other, even though they have agreed a contract on how to collaborate in the PBL process. The tutor could tackle trouble by focusing on *method* and making the participants aware of how far they have come in their procedure with the problem. This does frequently lead to a discussion on *method*, and the participants may come to recognize that they have not all reached the same of the seven steps. While one participant may still be trying to define the problem, another participant has been brainstorming for a possible cause, and yet another is trying to formulate learning objectives. Once *method* has thus been sorted out, the group will quickly switch its attention back to *content*.

Similarly, the tutor can help the group to concentrate on *process*. For example, "you are unusually silent today", addressed to a student who is normally very active in discussion, would enable the group to consider such an "unusual" phenomenon. That member of the group will either be encouraged to participate or be allowed be remain passive for the time being.

Disturbed group dynamics may come to the tutor's attention as, for example, a conflict between two members of the group. The tutor could then bring this to the group's attention by asking whether the other students have notice what is going on and thus letting them deal with the disturbance in their work. If the tutor has misinterpreted the situation, the group will make that clear without much hesitation. When a tutor does not intervene because she is unsure how to manage the conflict, it is likely to escalate. Should the tutor attempt to deal with the situation by intervening at the level of *content* by supporting one side or another, the conflict could become a major issue.

Quite frequently new tutors come with the notion that the tutor should be *passive* so as not to disturb the group in its work. As the participants progress through the course they come to recognise the need for active observation of what happens in the group. Thus the myth of passivity is quietly killed off. Tutors who are energetic and like to be active can employ a variety of suitable means to inject their energy into the group without doing any harm. Tutors can help in developing the students' thinking by assisting them to reflect on their thought processes with questions such as "why do you think this would work?" or "how does this relate to the facts you have identified in the problem?".

Feedback from the group

To give and receive feedback is important for the tutor, for the students, and for the group as a whole; further development of the group's function will depend on clear feedback. When the tutor projects an attitude of willingness to listen, the group is more likely to enter into open discussion with the tutor. This will give the tutor a better understanding of how to develop cooperation within the group. Each training session ends with an opportunity for the participants to reflect on the role played by the tutor and by the members of the group.

In some cultures it may not be customary to offer unequivocal feedback. It may then be helpful to assist the participants in providing such feedback by asking them to concentrate on their personal experience in completing sentences such as:
"To me the tutor has been helpful by ..."
"The tutor hindered me by ..."
"It would have helped me, if the tutor had ..."
"To me the work of the group has been ...., because ..."
Tutors will benefit greatly for their own development and that of their group if they can accept feedback as a "gift" which they can use as they see fit.

Feedback from the supervisor
The role of tutor is a quite stressful experience for many participants, and they may well be nervous to perform in front of colleagues and a video camera. The number of interventions by the supervisor ought, therefore, to be balanced between the need to intervene and the possibility of interfering with the work of the tutor and the group. Perhaps some of such interventions can be deferred to the less stressful period of reflection when the tutor and the supervisor review the video tape.

The thirty minutes which a tutor spends with a supervisor and the video tape is often a new and very valuable experience. It is also a very costly session, as it is restricted to a single participant with a highly skilled and very experienced colleague. Yet the opportunity to let the participant view his or her actions on video tape, to reflect on action and reaction, and to have the benefit of discussion with so experienced a colleague makes this part of the course eminently worthwhile.

Here the supervisor can act at a more personal level than was possible in the presence of the role play group. However, the full value of the supervisor's contribution must depend on the willingness of the participant to accept advice. The tutor will then have a superb opportunity to take a critical look at his or her own behaviour, to understand it and to find alternative ways that might be more effective. The focus is frequently on cooperation by the tutor with the group and the effects on the group.

The supervisor must be sensitive to the tutor's state of readiness to accept suggestions or advice. Such intimate review of a tutor's performance is an entirely new experience for many, and where a suggestion from the supervisor is rejected it may well be a signal that the participant is not yet ready to accept such advice.

Feedback with the educationalist
During the review of the group's experience with the two role play tutors, issues for discussion tend to cluster around specific aspects. These may refer to difficulties experienced during the tutorial sessions; the size of the group; for how long the composition of the group should remain the same; the relationship between the problem and the objectives; and how progress and achievement of the students should be assessed. Participants come from

different faculties, with varied teaching experiences and theoretical knowledge of education. Lively discussion is fostered by the heterogenious composition of the training group on the course. This tends to generate interest on wider educational issues; and handouts, as well as books are made available to the participants.

Course Design and Outcome

The design emphasizes the seven steps of PBL and Kolb's circular learning style model. The participants, who wish to learn how to function as a tutor, work as if they were a group of students. The question "what demands are made of a good tutor?" is posed during the morning of the first day, once the participants have agreed their contract for collaboration. At the end of the second day that question is discussed once more. At the start it is common to find the belief that the tutor must be an expert in the content of the problem. Hardly anyone will still adhere to this notion at the end of the course. Attention shifts from the content to how students think and how to assist their development of critical and clinical reasoning. As the participants experience and come to respect the work undertaken by students in a PBL curriculum, many develop a special interest in searching for excellence as tutors. Many come to recognize that their new insights and knowledge can also assist them in leadership roles in other settings; some will say that they learned in dimensions which they had not even known that they existed.

References

Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development.* Englewood Cliffs, NY: Prentice Hall.

Schmidt, H. (1983). Problem-based learning: Rationale and description. *Medical Education,* 7, 1-16.

Annals of Community-Oriented Education
1993, Vol. 6, 321-325

Work-Based Clinical Education: A Distance Learning Programme

Ken Cox
University of New South Wales
Kensington, Australia

Abstract

The paper presents the rationale and structural details of a unique distance learning postgraduate course for the degree of Master of Clinical Education. Participants use their own practice and experience as the subject for reflection and learning. There is evidence that this approach in a demanding sequence of learning does lead to change in behaviour. The course is open to all health professions. When workshops can be arranged outside Australia, the course is available elsewhere in the world.

This paper describes a new and unique distance learning Master degree or graduate Diploma in Clinical Education Programme for clinical teachers. Most educational courses for health professions deal with educational planning derived from class room models. This course focuses on the processes of delivery of health care to patients. The rationale for the course is based on the following beliefs.

Educational Neglect of Clinical Teachers

Clinical teachers (and consequently clinical learners) suffer from educational neglect. Clinical teaching is often regarded as unmanageably *ad hoc*, since the arrival of patients with maladies which illustrate the topics to be covered in a curriculum cannot easily be predicted or controlled. Clinical teachers frequently have no thorough briefing on the clinical curriculum, nor training in executing it. The clinical curriculum on paper may contain no detailed plan of exactly what is to be taught, or to what level of expertise.

Despite their closeness to their students compared with the classroom, many clinical teachers know only a little about what each student knows or doesn't know or is supposed to know. Many have no recorded memory of their students' performance, and no follow-up of previously detected defects in skill or style. Inadequate supervision of students' learning was commonplace in our studies of ward-based teaching of physical signs.

Educational programmes for medical teachers usually focus on curriculum, instruction and assessment. This programme requires participants to analyse the realities of practice, what affects the care actually delivered, and how clinical working knowledge is learned.

Requests for reprints should be sent to K. Cox, University of New South Wales, School of Medical Education, 2033 Kensington, Australia.

Work-Based Learning

Learning is assumed to derive from personal experience, clarified and expanded by reflection and explanation. Capability is assumed to flow from turning experience plus explanation into clinical working knowledge and skill.

For a supervised apprentice experience takes place at work with increasing responsibility and independence. Such work-based learning (WBL) deals with the complexity of real situations and the particular instance, not the simplifications of theory. Reflection and explication guided by a clinical teacher connect the particular patient with the general decision rule to construct clinical "working knowledge". Both contribute to judgement and professional expertise. Participants report that the requirement to integrate the course into daily practice and teaching makes the course extremely useful in deepening the understanding of both.

Experience Plus Explanation

Planning clinical teaching entails steps of *preparation* before entering the wards, *briefing* before seeing the patient, *interaction* with the patient and the manifestations of disease, and *debriefing* of the experience. This **experience cycle** is repeated from patient to patient.

Comprehending the experience more deeply entails *reflection* on meanings and connection with previous parallel experiences, *explication* of the pathophysiology and the psychosocial phenomena, and derivation of *clinical working knowledge* of what to do better next time. This **explanation cycle** of the 'examined experience' is described by participants as a "think tank" which constructs a richer insight into professional practice.

The course requires documented practice by participants in working through all these phases with students or graduate trainees. While "knowing" may achieve attitude change, participants report that "doing" has induced change in their clinical and teaching behaviour.

Understanding Clinical Process

The processes of clinical practice include skills in consultation, reasoning, decision making, performance appraisal, quality assurance, defensible ethics and honesty, ward and practice management, supervision, team work and evaluation (of everything). To teach these fields, clinicians must first understand them. To improve their own performance and expertise, clinicians must be fully aware of what they actually do.

The course requires clinicians to record and document their interpersonal, diagnostic and decision making behaviour to generate real empirical data for their analyses. From the combination of examined experience, reflection and readings, clinicians must then plan, execute and evaluate their teaching of clinical process. The subject *Practice as a Discipline* explores clinical process and professional expertise as disciplines worthy of study in their own right (Cox, 1991; Cox, 1992 A, B).

Clinical Communication

Since the dissatisfactions of patients with their consultations turn most frequently on poor communication, the teaching and learning of these skills are dealt with explicitly in an attempt to reduce the number of inter-personal cripples in the profession.

Clinicians usually expect students to relate rapidly to complete strangers who differ in age, social and educational background, and in the words used to describe symptoms. Within seconds, or at the most minutes, students are expected to establish rapport, to explore a story of events which may have unfolded over years, and to terminate the relationship gracefully. Young people are learning a new social role when they must ask probing and even embarrassing questions of another, usually much older person. Undressing strangers and examining or treating their bodies is an even greater social jump.

Students have little formal preparation or training for these intrusive activities of clinical practice. Students are expected to want to create brief relationships with patients, although teachers may display little readiness or skills in doing so themselves. Teachers who model intense interest in physical signs, and no interest in the person in whom they reside, can expect to produce 'body mechanics' who understand little about their patients - or themselves!

The course requires clinical teachers to record their inter-personal style with patients and with students in a number of different ways, and to analyse the data they collect. Already, evidence is clearly that, even in a distance learning course like this, such insights can induce behavioural change in their relationships, leading to a range of joint activities with students.

Learning on the Job

Teachers, like students, learn by doing their job. Work takes place in a particular setting, with particular people, resources, habits and routines. External, 'context-free' courses are ineffectual in changing behaviour 'back home'. Clinicians do not have time or sufficient educational stamina, anyway, to go off to courses on teaching.

As funding drops, and patient stay in teaching hospitals becomes increasingly truncated, shrinking educational opportunities call for studying the context or 'learning environment', as well as the patients' diseases. Learning within practice (Cox, 1990) will grow over the next decade at all levels from undergraduate to continuing education; but clinical teachers and clinical settings are poorly prepared to understand and implement the necessary structural and educational changes.

The course brings educational ideas to clinicians which they try out in the context of their own work place. Participants enjoy being "flooded with ideas" and "a constellation of possibilities" from which they can "pick out" those that stimulate us".

Self as 'Unit of Study'

The programme ensures its relevance to each participant by requiring them to be their own 'unit of study'. Their previous learning and practice experiences are elicited. Observations on patient care and teaching are structured to document real events for analysis and evaluation. Participants repeat that reflection on this observational material on themselves leads to deeper insights into clinical practice as well as teaching. "When I am with a patient or student there is another thinking process going on in my brain, examining everything I do".

Course material is provided in various formats, including videotapes. Study guides are divided into small Units of an hour or so to accommodate to the busy schedule of clinicians. Each Unit ends with requests for a structured evaluation, dealing with extraction of concepts and 'propositions' about clinical practice and clinical learning, reactions, documentation, advice to course designers, and identification of working knowledge acquired in the Unit.

The course expects participants to be responsible, self-directed learners who are thoughtfully deepening their understanding of what they do every day. Until teachers learn for themselves the skills of self-directed learning they cannot honestly guide their students in self-direction. Self-direction does not happen spontaneously. The course takes clinicians through steps in helping students to plan, manage and assess their own learning and achievement.

Course Content Areas

Subjects developed so far are *Clinical Teaching, Learning in Small Groups, Clinical Supervision, Exploring Clinical Ethics, Learning Consulting Skills, Learning Clinical Reasoning,*. Currently being completed are *Clinicians as Managers, Assessment of Clinical Performance, Learning Clinical Decision Making, Evaluation of Clinical Teaching, Planning of Clinical Educational Programmes, Clinical Social and Learning Environment, Practice as a Discipline., Patient and Family Education, Learning by Experience*, and *Research in Clinical Education*. Participants may undertake *Independent Study* of topics of special interest, each up to four credit points, and approved *Electives* from other tertiary institutions.

Assessment of each subject is by two or three assignments based on practical activities which must be passed. A list of possible assignments is provided to choose among; participants may negotiate formally for a different assignment of their own design. All assignments so far have been rich in insights and useful practical developments.

Most subjects earn two credit points, some three. Twenty credit points are needed for the graduate Diploma. Twenty four credit points plus a one semester project are needed for the Master of Clinical Education. The project requires sufficient quantity and quality of investigation or development to produce a publishable paper or a project report acceptable to two examiners.

The course begins with a five-day workshop at the School of Medical Education in mid-February. A workshop at various levels is conducted at the beginning of each academic year. As a distance learning programme, the course is available to clinicians around the world and it has a number of overseas participants. The workshops each year have proven essential in clarifying and deepening understanding of clinical process and clinical education. Currently, the workshops are conducted only in Sydney, but with appropriate funding, could be staged anywhere.

The current fifty participants are mostly from medicine, but also from nursing, physiotherapy, clinical psychology and dentistry. As far as practicable, examples are drawn from all disciplines, as well as from management, from other fields of relevant research, and from daily life.

Experience of School of Medical Education

The School of Medical Education of the University of New South Wales has conducted a course work or research Masters degree and PhD programme in education for the health professions since 1975, admitting over 300 graduate students from 31 countries. A further 1313 from 50 countries have participated in two week workshops and short courses, and 247 short term Fellows have undertaken individualised programmes. This new distance learning programme in clinical education was piloted during 1991 with 16 medical educators in the Royal Australian College of General Practitioners (postgraduate) Family Medicine Programme, and expanded to all clinical health professions in 1992.

References

Cox, K. (1990). Learning within practice. *Medical Journal of Australia, 152,* 565-566.

Cox, K. (1991). Disciplines within general practice. *Australian Family Physician, 20,* 451-454.

Cox, K. (1992 A). What doctors need to know. A note on professional performance. *Medical Journal of Australia, 157,* 764-768.

Cox, K. (1992 B). What surgeons know. A note on clinical working knowledge. *Australian and New Zealand Journal of Surgery, 62,* 836-840.

Annals of Community-Oriented Education
1993, Vol. 6, 327-332

MEDICAL EDUCATION WORLDWIDE

A Global Strategy for Medical Edcation: Partners in Reform

Henry J. Walton
World Federation for Medical Education
Edinburgh, United Kingdom

Abstract

The onrush of beneficial change which now flows in medical education has never been stronger since the start of this century. Such activity has not been seen since the era of Flexner.

There can be no doubt that the world scene is now set for decisive, effective action. The many tributaries of the stream of reform converge this year at Edinburgh, to diverge again into six Regional Conferences during 1994 in Africa, the Americas, the Eastern Mediterranean, Europe, South-East Asia and the Western Pacific. The centres of activity and connection cited below do not in any way make up a comprehensive catalogue. Rather, each development and each reform is a link in a chain, a module with which the World Federation for Medical Education (WFME) has been implicated. Each name given, each title stated, is intended as a marker, a nexus. These are among the partners to be mobilised and brought together for the task.

The Impact of the Edinburgh Declaration

In 1988, after worldwide analysis starting from grassroots in every country, then passing through six Regional Conferences, a World Conference decided on the reforms now necessary in the education and training of doctors.

The twelve principles of the Edinburgh Declaration deal with the following reorientations:

1. Widening the educational settings in which medical education has to take place;
2. National health priorities as the context for education;
3. Active learning throughout life (with appropriate reforms of the examination system);
4. Professional competence as the purpose of all learning;
5. Training of medical teachers as educators;
6. Health promotion and prevention of illness;
7. Integration of science and clinical practice;
8. Selection of entrants, for non-cognitive as well as intellectual attributes;
9. Coordination of education with health delivery services;

Requests for reprints should be sent to H. Walton, Centre for Medical Education, 11 Hill Square, Edinburgh EH8 9DR, United Kingdom.

10. Balanced production for the national need for doctors;
11. Cooperation of the Health Professions (the issue of multiprofessional training);
12. Continuing medical education as a main sphere of medical education.

Confident that these are the key reforms, attention can now shift to the correspondence between the education system with the health care system. The medical profession is changing extensvely and rapidly. The concern now is with the interface between education and training on the one hand, and the health care services on the other. The two spheres do not interdigitate satisfactorily. This lack of fit, which has grave consequences for the health care of people everywhere, must be examined authoritatively.

The WFME Regional Associations

The Federation is constituted by the six Regional Associations:

Association of African Medical Schools (AMSA)
President: Professor Kopano Mukelabai;

Association for Medical Education in Europe (AMEE)
President: Professor Alberto Oriol-Bosch;

Panamerican Federation of Associations of Medical Schools (PAFAMS)
Executive Director: Dr. Pablo Pulido;

South-East Asian Regional Assocation for Medical Education (SEARAME)
President: Professor Jasbir Bajaj;

Association of Medical Schools in the Eastern Mediterranean Region (AMEEMR)
President: Professor Sa'ad Hijazi;

Western Pacific Regional Association for Medical Education (WPRAME)
President: Professor Masahisa Nishizono.

WHO Regional Offices, as partners with these Regional Assocations, are preparing th Regional Reports as input to the 1993 Summit. In association with WFME, each Regional Assocation will hold the six Regional Conferences during 1994, to implement the 1993 Summit recommendations. Each of these six pairs of bodies brings essential expertise for the global task. In addition, each Regional Association carries out crucial region-specific work.

The Network of Community-Oriented Educational Institutions for Health Sciences

WFME has always worked with the Network as a partner in the great task of reorientation of medical education, viewing the Network as the main global protagonist in implementing, first, community-oriented education and, second, problem-based learning. The Network is now in the process of assessing its remarkable achievements, and in redirecting its future course. Its internal scrutiny and redirection fits it, particularly now, to partner WFME, a firm intention since it was founded.

International Organisations

WFME, as the senior NGO representing medical education with the UN bodies, has the closest collaboration with the internation bodies representing each of the specialties of medicine. For example, in March, an international Working Group met in London, called by WFME and the World Federation of Neurology (WFN). A report resulted on the international perspective in teaching neurology, which will be presented to the WFN Congress at Vancouver later this year. Corresponding global curricula are being prepared with five other international specialist associations: Paediatrics, Psychiatry, Public Health, General Practice and Oto-rhino-laryngology.

The international body for General Practice, WCNCA, is a partner in the 1993 Summit. The World Federation for Education in Public Health and its Regional Associations (the Association of US Schools of Public Health and ASPHER the corresponding European Assocation) are also to be represented at the Edinburgh Summit.

Nations

In most countries there is now a National Association for Medical Education. They are all affiliated with WFME through their respective Regional Associations.

It is often a massive loss for the global community when the documentation of national associations is confined to the particular country. The Association of American Medical Colleges, has produced the ACME-TRI Report (a follow-up on the GPEP Report of 1987). It publishes courageous conclusions of foremost importance to all countries. Never before has the bold judgement been authoritatively expressed that a "specific barrier" to reform of medical education is, first and foremost, the intertia of medical teachers. This arraignment squarely personalizes the customary - and true - emphasis that education is accorded low importance, as compared with clinical workd and research. The AAMC will be present at the 1993 Summit.

Medical Schools

New, innovative medical schools have a major influence to bring to bear. However, it is in the established "traditional" medical schools that almost all the world's doctors will continue to be trained. Among these are schools such as Tucuman; the many other schools in Project UNI in South America; the consortium of schools in India; and Harvard with its *New Pathway*.

The World Health Organization, Geneva

The Director-General is closely concerned with the reform of medical education. He made the opening address at the conference in 1988, and will do so again at the 1993 Summit.

The Division of Human Resources for Health is represented on the WFME Executive Council. WFME is associated with the Division's programme "Changing Medical Education: An Agenda for Action", and participated in formulating the WHO Study Group "The Search for Relevance".

The Regional Offices of WHO

The six WHO Regional Offices will be present at the 1993 Summit. Their Human Resources for Health divisions, with the respective Regional Associations for Medical Education, are responsible for the Regional Reports. The Panamerican Health Organization Office presented a preliminary document as long ago as October 1992, and so also did the Eastern Mediterranean Office. The WHO Regional Offices, in addition to their substantial sponsorship of the 1993 Summit, will be main partners in the Six Regional Conferences to follow in 1994.

UNICEF

UNICEF, with its global responsibility for maternal and child health, is regarded by WFME as a main international body for closest cooperation. The recommendations of the 1990 World Summit for Children have many pressing implications for medical eduation. The Baby Friendly Hospital Policy depends on doctors to promote the Lactation Policy of UNICEF.

UNICEF has five Regional Offices; all are implicated in the preparations for the 1993 Summit.

UNESCO

For a decade and more there have been insistent pleas that UNESCO should be drawn into the reform process. Its exclusion was unreasonable. Almost everywhere medical schools are in the university sector, and UNESCO is the international body concerned with the world's universities. Medical education must ensure that it is included among the concerns of UNESCO's International Commission on Education and Learning for the 21st Century. The UNESCO Director-General has now set up a Division of Medical Science. He was represented at the World Conference in 1988. UNESCO, with the WHO European Office, was a main sponsor of the "Portuguese Project" set up by the Government of Portugal which appointed a Minsterial Commission. The *Report* of the Commission is now being reviewed by the International Committee which advised the Commission.

UNDP

The United Nations Development Programme in its *1992 Report* emphasized the alarming widening of the economic and social disparities within and between nations. The great bulk of the world's wealth is concentrated in a fifth of the countries; the richest 20% of the world's population receives 82.7% of the total world income, while the poorest 20% of the population receives only 1.4% of the world's wealth.

The World Bank

It happens that the 1993 World Development Report of the Bank is on Health. Speaking at the 1993 Summit will be the Senior Human Resources Advisor. The 1993 World Bank Report on Health will be launched to the medical education community at the August Summit.

The Great Foundations

The altruism of the great foundations is a crucial factor in the reforms taking place. Much that has happened would be unthinkable without their encouragement and support. The entire programme of WFME was started with Rockefeller support; the same foundation supported the Bellagio Meeting which was a trial run for the Ministerial Consultations following the 1988 Conference.

The pattern for the Ministerial Consultations was for WFME to identify a government within each of the six Regions and gain partnership of the Health and Education ministers (e.g. Dr. Leonor Beleza and Dr. Roberto Carneiro of the Portuguese Government, hence the "Lisbon Initiative"; Dr. O. Ransome-Kuti and Dr. Jibril Aminu of the Nigerian Government, hence the Abuja Plan of Action). A major outcome of the African Consultation was the setting up of the long-term Task Force for Africa. In the first example the Gulbenkian Foundation was the foundation concerned, and in the second the Carnegie Corporation of New York. Moreover, the foundations also provide a key consultant.

The great foundations will be substantially evident at the 1993 World Conference. To mention only one, the WK Kellogg Foundation will present for global scrutiny its Project UNI in South America, its Community Partnerships Program in the United States, and its Southern Africa Project. The Carnegie Corporation of New York is again a main sponsor. The Technical Discussions of the World Health Assembly in 1986, on Mobilizing Universities for Health, was chaired by Dr. David Hamburg of Carnegie: its report is the key document in bringing universities to take responsiblity for the health of their communities.

Governments

No reform in medical education of national scope takes place without governmental approval and support: that is certainly so in postgraduate training, and will be increasingly so in the field of continuing medical education (CME). WHO Geneva has taken a lead in CME. Ministers of both Health and of Education, as they were in 1988, will be key participants in the Edinburgh Summit. One Minister, from South-East Asia, is to be accompanied by a delegation from his Department. Other Ministers are sending personal representatives.

The World Health Assembly

The Assembly endorsed the Edinburgh Declaration by its resolution WHA 42.38 of 19 May 1989. As a preliminary to engaging the attention of the Assembly to the 1993 Summit, the Meeting of the WHO Executive Board in Geneva in January was addressed by the WFME President on the strategy for "redesigning the medical doctor, as least as far as education and training are concerned". The Assembly itself will be notified next May, and the recommendations of the Summit will be presented to it in May 1994.

International Agencies

The international bodies with specific remits and assignments, focused on specific goals, are greatly concerned with health as a main basis of development and social welfare. The British Council, with offices worldwide, is concerned with promotion of educational, cultural and technicl cooperation between countries and with making experts and expertise available in countries where they are needed. The Commonwealth Secretariat has important meetings of Heads of State, where health has on occasion been the main concern, and is active internationally in linking political, cultural and technological development of member countries. Both bodies are co-sponsors of the 1993 Summit.

National Civic Bodies

In every country, reform of medical education depens on the participation of civic bodies and agencies concerned with development. WFME could not have carried out its activities without the intensive participation of the City of Edinburgh District Council, the Lothian Regional Council, the Scottish Development Agency, Lothian and Edinburgh Enterprise Ltd., the University of Edinburgh and its Faculty of Medicine.

The Reason for the 1993 Summit

Progress achieved - and it is prodigious - since 1988 must be reviewed; all new examples of reform and substantial developments must be directly represented at the World Conference: this goes without saying. However, the main reason for the Summit is to decide on a global strategy. Without a global strategy for change the necessary reorientation of medical education on a world scale will never happen. In its communique on 12 August the Summit will be challenged to set out the international mechanisms necessary for implementing and managing reform on an ongoing basis. The structure for cooperation will then have to be decided, and the necessary resources mobilised.

Annals of Community-Oriented Education
1993, Vol. 6, 333-381

FROM THE LITERATURE

Some Recent Books

Assessment & Evaluation

Towards the assessment of quality in medical education. (1992). WHO/HRH/92.7. Geneva, Switzerland: World Health Organization.

The assessment and accreditation of medical schools by the Australian Medical Council. (1992). Melbourne, Australia: Australian Medical Council.

Evaluating the outcome of the undergraduate medical course. Wallis, B., & Pearson, S.A. (Eds.). (1992). Newcastle, N.S.W., Australia: Faculty of Medicine, University of Newcastle.

Examination for membership of the Royal College of General Practitioners (MRCGP): Development, current state and future trends. Lockie, C. (Ed.). (1992). Occasional Paper 46. London, United Kingdom: Royal College of General Practitioners.

Rating scales for vocational training in general practice. (1990). Occasional Paper 40. Manchester, United Kingdom: Department of General Practice, University of Manchester.

The practice audit plan: A handbook of medical audit for primary care teams. (1990). Bristol, United Kingdom: Severn Faculty, Royal College of General Practitioners.

Quality assurance for family doctors. Report of the Quality Assurance Working Party, World Organization of Family Doctors. Marwick, J., Grol, R., & Borgul, A. (1992). Jollimont, Victoria, Australia: Royal Australian College of General Practitioners.

Computers in medical audit. Regby, M., McBride, A., & Shiels, C. (1992). London, United Kingdom: Royal Society of Medicine.

Community-Based Education

Community-based teaching: Sharing ideas. No. 1. Towle, A. (1992). London, United Kingdom: King's Fund Centre.

Teaching family medicine in medical school: A companion to predoctoral education in family medicine. Smee, D.E. (Ed.). (1991) Kansas City, MO: Society of Teachers of Family Medicine and American Academy of Family Physicians.

Medical teaching in ambulatory care: A practical guide. Rubenstein, W., & Talbot, Y. (1992). New York, NY: Springer Publishing Co.

Distance Learning and Learning Materials

Directory of courses and materials for training in distance education. Volumes I & II. (1992). Vancouver, BC, Canada: Commonwealth of Learning.

Distance education: The foundation of effective practice. Verduin, J.R., & Clark, T.A. (1991). Don Mills, Ont. Canada: Maxwell Macmillan (Canada).

Preparing instructional text: Document design using desktop publishing. Misanchuk, E.R. (1991). Englewood Cliff, NJ: Educational Technology Publications.

Testing and evaluating manuals: Making health learning materials more useful. Folmer, H.R., Moyniham, M.N., & Schothorst, P.M. (1992). Amsterdam, The Netherlands: Royal Tropical Institute.

Writing successfully in science. O'Conner, M. (1991). London, United Kingdom: Harper Collins.

Grants and Fellowships

The grants register 1993-1995 [Information on over 6,000 new international awards]. (1992). Basingstoke, United Kingdom: Globe Book Services, Macmillan Press.

Learning and Teaching

Medical education in theory and practice. Downie, R.S., & Charlston, B. (1992). Oxford, United Kingdom: Oxford University Press.

Comment raisonnent les médecins: Réflexions sur la formation médicale. Guilbert, J.-J. (1992). Geneva, Switzerland: Editions Médecine et Hygiène.

Clinical teaching in nursing. White, R., & Ewan, C. (1992). London, United Kingdom: Chapman and Hall.

Collaborative clinical education: The foundation of effective health care. Westberg, J., & Jason, H. (1992). New York, NY: Springer Publishing Co.

Developing professional education. Bines, H., & Watson, D. (1992). London, United Kingdom: Society for Research in Higher Education.

The idea of higher education. Barnett, R. (1990). Buckingham, United Kingdom: SRHE & Open University Press.

Learning to effect. Barnett, R. (Ed.). (1992). Buckingham, United Kingdom: SRHE & Open University Press.

Self-direction for lifelong learning: A comprehensive guide to theory and practice. Candy, P.C. (1991). San Francisco CA: Jossey-Bass.

Self-directed learning: Critical practice. Hammond, M., & Collins, R. (1991). Quebec, Canada: Consultancy for Alternative Education.

Improving the quality of student learning. Gibbs, G. (1992). Bristol, United Kingdom: Technical and Education Services.

53 Problems with large classes. Habeshaw, S., Gibbs, G., & Habeshaw, T. (1992). Plymbridge, United Kingdom: Technical & Educational Services.

Effective learning and teaching in higher education. in twelfe modules: 1) What is active learning?; 2) Course design for active learning; 3) Planning teaching for active learning; 4) Active learning in large classes and with inreasing student numbers; 5) Enabling active learning in small groups; 6) Active learning in practical class; 7) Active learning in field work and project work; 8) Learning actively on one's own; 9) Essay writing for active learning; 10) Promoting the development of personal and professional skill; 11) Assessing active learning; and 12) Evaluating teaching and courses from an active learning perspective. Sheffield,United Kingdom: CVCP Universities' Staff Development and Training Unit, University House.

Management and Practice

Developing teamwork in primary health care: A practical workbook. Pritchard, P., & Pritchard, J. (1992). Oxford, United Kingdom: Oxford University Press.

A journey into the unknown: A workbook on the formation of primary health care teams. Northumberland FHSA, DHA and LMC. (1991). Morpeth, United Kingdom: Northumberland Family Health Services Authority.

Management of health services by nurses. Henry, B., Lorensen, M., & Hirchfeld, M. (1992) WHO/HRH/NUR/92.3. Geneva, Switzerland: World Health Organization.

Health services research: An anthology. White, K.L., Frenk, J., Ordóñez, C., Paganini, J.M., & Starfield, B. (Eds.). (1992). Scientific Publications No. 534, Washington, DC: PanAmerican Health Organization.

Health promotion and chronic illness: Discovering a new quality of health. Kaplun, A. (Ed.). (1992). WHO European Services No. 44. Copenhagen, Denmark: World Health Organization.

Clinical guidelines (protocols). Haines, A., & Hurwitz, B. (Eds.). Occasional Paper 58. (1992). London, United Kingdom: Royal College of General Practitioners.

Private practice and public resonsibility: Third consultation with leading medical practitioners. (1992). WHO/HRH/92.5. Geneva, Switzerland: World Health Organization.

Policy, Strategy, Change

Guidelines for legislation affecting the development of human resources for health. Roemer, R. (1992). WHO/HRH/92.4. Geneva, Switzerland: World Health Organization.

Medical education in transition. Report of the Commission on Medical Education: The Sciences in Medical Practice. (1992). Princeton, NJ: Robert Wood Johnson Foundation.

Educating medical students: Assessing change in medical education-The road to implementation. (1992). ACME-TRI Report. Washington, DC: Association of American Medical Colleges.

The politics of reform in medical education and health services: The Negev project. Porter, B., & Seidelman, W.E. (1992). New York, NY: Springer Publishing Co.

The medical schools' mission and the population's health. Proceedings of a conference sponsored by the RSM Foundation and the Josiah Macy Junior Foundation. White, K.L., & Counelly, J.E. (Eds.). (1992). Berlin, Germany: Springer Verlag.

Healing the schism: Epidemiology, medicine and the public's health. White, K.L. (1991). Berlin, Germany: Springer Verlag.

A call for new public health action. (1992). WHO/HRH/92.1. Geneva, Switzerland: World Health Organization.

Successful faculty in academic medicine: Essential skills and how to manage them. Bland, C.J., Schmitz, C.D., Henry, C.H., Stritter, F.T., & Aluise, J.J. (1989). New York, NY: Springer Publishing Co.

Some Journals and Newsletters

AMEE Newsletter (Association for Medical Education in Europe). Centre for Medical Education, Ninewells Hospital and Medical School, Dundee DD1 95Y, United Kingdom.

ANZAME Bulletin (Australian and New Zealand Association for Medical Education) School of Medical Education, University of New South Wales, Kensington, 2033, Australia.

Assessment and Evaluation in Higher Education. Carfax Publishing Co., Abingdon, 0X14 3UE, United Kingdom.

Changing Medical Education and Medical Practice. H.R.H., World Health Organization, 1211 Geneva 27, Switzerland.

Educacao Médica [English summaries]. Faculdade de Medicina da Universidade de Porto, Hospital de S. João, 4200 Porto, Portugal.

Health and Social Care in the Community. Blackwell Scientific Publications, Oxford, OX2 0EL, United Kingdom.

Journal of Interprofessional Care. Carfax Publishing Co., Abingdon, OX14 3UE, United Kingdom.

Learning for Health. Education Resource Group, Liverpool School of Tropical Medicine, Liverpool, United Kingdom.

Newsletter. National Teacher Training Center for the Health Professions, University of the Philippines, Manila, Philippines.

Probe Newsletter. Australian Problem-Based Learning Network, P.O.Box 555, Campbeltown, 2560, Australia.

Some Recent Papers

With the generous consent of the Editors of Academic Medicine (formerly the Journal of Medical Education), Medical Education, Medical Teacher, and Teaching and Learning in Medicine we have reproduced the abstracts of a number of papers that may be of particular interest to readers of the Annals. Where it seemed of especial help to readers, who may not have easy access to comprehensive library facilities, we have added the references which were given at the end of a paper.

We have arranged the 47 abstracts under the following headings:
Assessment and Accreditation, Clinical Reasoning and Critical Reasoning, Community-Based Education, Education - Policy and Administration, Ethics, Problem-Based Learning, Selection of Students, Teaching and Learning, and Teaching Teachers.

The addresses for ordering these journals are:
Academic Medicine: (formerly Journal of Medical Education): Association of American Medical Colleges, 1 Dupont Circle, N.W., Washington, DC 20036, USA
Medical Education: Blackwell Publishing Co., P.O. Box 87, Osney Mead, Oxford, OX2 0DT, United Kingdom
Medical Teacher: Carfax Publishing Co., P.O. Box 24, Abington, OX14 2UE, United Kingdom
Teaching and Learning in Medicine: Lawrence Erlbaum Associates, 365 Broadway, Hillsdale, NJ 07642, USA.

Assessment and Accreditation

Origin of the LCME, the AAMC-AMA Partnership for Accreditation. Kassebaum, D.G. (U.S.A.). (1992). *Academic Medicine, 67,* 85-87.

The accrediting agency for U.S. and Canadian medical education programmes, the Liaison Committee on Medical Education (LCME), was founded 50 years ago at a 1942 meeting of leaders of the Association of American Medical Colleges (AAMC) and the American Medical Association. The author, using sources from the AAMC archives and elsewhere, describes the background, content, and outcomes of this meeting, which was called to devise ways for the two organisations to avoid duplication of effort during the emergency conditions brought about by World War II. The participants met for several specific reasons: to create a united front to protect medical students from the wartime draft, to find economies in carrying out the profession's duties to assure the quality of medical education and to survey medical schools that were being affected by pressure for continuous sessions and accelerated medical training. At this meeting a joint board for medical school surveys was created eventually this liaison board became known as the LCME. The author closes with a quote from the 1942 meeting concerning the social responsibility of medical education and notes the continuing importance to translate this and other imperatives into standards for accreditation that protect educational quality and foster its improvement.

An Objective Structured Clinical Examination for the Licentiate: Report of the Pilot Project of the Medical Council of Canada. Reznick, R., Smee, S., Rothman, A., Chalmers, A., Swanson, D., Dufresne, L., Lacombe, G., Baumber, J., Poldre, P., Levasseur, L., Cohen, R., Mendez, J., Patey, P., Boudreau, D., & Bérard, M. (Canada). (1992). *Academic Medicine, 67*, 487-494.

The Medical Council of Canada (MCC) administers a qualifying examination for the issuance of a license to practice medicine. To date, this examination does not test the clinical skills of history taking, physical examination, and communication. The MCC is implementing an objective structured clinical examination (OSCE) to test the feasibility, reliability, and validity of running a multisite, two-form, four-hour, 20-station OSCE for national licensure. In February 1991, 240 volunteer first- and second-year residents were tested at four sites. The candidates were randomly assigned to one of two forms of the test and one of two sites for two of the four sites. Generalizability analysis revealed that the variance due to form was 0.0 and that due to site was .16 compared with a total variance of 280.86. The reliability's (inter-station) were .56 and .60 for the two forms. Station total-test score correlation, used to measure station validity, were significant for 38 of the 40 stations used (range .14-.60). The results of the OSCE correlated moderately with the MCC qualifying examination; these correlations were .32 and .35 for the two test forms. Content validity was assessed by post examination questionnaires given to the physician examiners using a scale of 0 (low) to 10 (high). The Physicians' mean ratings were: importance of the stations, 8.1 (SD, 1.8); success of the examination in testing core skills , 8.1 (SD, 1.6); and degree of challenge, 7.8 (SD, 2.1). The results indicate that a full-scale national administration of an OSCE for licensure is feasible using the model developed. Aspects of validity have been established and strategies to augment reliability have been developed.

Six Years of Comprehensive, Clinical, Performance-Based Assessment Using Standardised Patients at the Southern Illinois University School of Medicine. Vu, N.V., Barrows, H.S., Marcy, M.L., Verhulst, S.J., Colliver, J.A., & Travis, T. (U.S.A.). (1992). *Academic Medicine, 67*, 42-50.

By the end of 1990-91, the Southern Illinois University of Medicine had six years of experience with comprehensive, performance-based examinations of senior medical students' levels of clinical competence; this report assesses the psychometric aspects of the six examinations given during that period. The examinations were aimed at determining the students' readiness for postgraduate training. Compared with other clinical performance-based assessments that use standardised patients (SPs), these examinations had two important and unique features: (1) the examinations assessed a comprehensive range of clinical skills and reasoning; and (2) they approximated the challenges of real clinical practice wherein a practitioner's skills need to be orchestrated and prioritised in order to meet the challenges of the case encountered. Each year, the performance-based assessment given was an intensive clinical examination requiring each student to work up 13 to 18 SP problems over a three-day period. To administer an examination to an entire class of students took three weeks. Because all students after the first year of administration (1986) were required to pass these examinations, the fairness of test design and scoring and the setting of performance standards for the examinations became important issues for the Faculty. The results, accumulated over six years and based on a total of 6,804 student-patient encounters involving 405 students, indicate that this kind of clinical performance-based examination can discriminate a wide range of students' clinical performances. The results provide evidence for the examinations' test security, content validity, construct validity, and reliability.

Standardised (Simulated) Patient's Accuracy in Recording Clinical Performance Check-List Items. Vu, N.V., Marcy, M.J., Colliver, J.A., Verhulst, S.J., Travis, T.A., & Barrows, H.S. (U.S.A.). (1992). *Medical Education, 26,* 99-104.

In large-scale performance-based assessment of medical professionals' clinical competence, simulated patients (standardised patients - SPs) are used not only to simulate case problems but also to record on check-list the examinees' clinical performance during their encounter with the SPs. The purposes of this study were to determine the SPs overall accuracy was affected by the various characteristics of the check-list, and by the different times during a day and the different days within the examination when the recordings were obtained. Results showed that the SPs accuracy in recording check-list items was good to very good and was affected by the length of the check-list, as well as by the type and the clarity of the check-list item. It was further found that the SPs accuracy was consistent and did not vary over the course of a one-day or a 15-day examination.

Senior Medical Students as Simulated Patients in an Objective Structure Clinical Examination: Motivation and Benefits. Feickert, J.A., Harris, I.B., Anderson, D.C., Bland, C., Allen, S., Poland, G.A., Satran L., & Miller, W.J. (U.S.A.). (1992). *Medical Teacher, 2/3,* 167-177.

Third and fourth year medical students were recruited to participate as simulated patients and examiners in an Objective Structured Clinical Examination (OSCE) administered for second year medical students. Students reported they were motivated to participate, not only by the honorarium, but because they believed the OSCE would be fun and interesting and because they were interested in medical education and in improving clinical evaluation. The third and fourth year medical students benefited academically and financially from participation. Faculty benefited by having a readily available source of enthusiastic and knowledgeable simulated patients.

Faculty Evaluation of Student Performance: A Step Toward Improving the Process. Parenti, C.M., & Harris, I. (U.S.A.). (1992). *Medical Teacher, 2/3,* 185-188.

Most clerkship evaluation systems give the greatest evaluative weight in deriving grades to some form of evaluation by faculty and house staff, although few studies have been reported concerning which elements of performance are most important or which discriminate best. The results of this study show that a select group of faculty, heavily involved with assessment of student performance, agreed that certain aspects of performance were more important and/or discriminated better between average and superior medicine clerks. We suggest that those aspects of performance be given more consideration when designing curricula, providing student feedback, and assigning grades for medicine clerkships and that medical educators engage faculty and house staff in the formal discussion of issues surrounding evaluation.

Profile-Based Assessment of Student Project Reports. Usherwood, T., & Hannay, D. (United Kingdom). (1992). *Medical Teacher, 2/3*, 189-196.

During their final year, medical students at Sheffield University are required to undertake a research or audit project. The students' project reports are assessed using a grid-style criterion-based profile. This is described, and the validity and reliability of this method of summative assessment are discussed.

References

Adderley, K., Ashwin, C., Bradbury, P., Freeman, J., Goodlad, S., Greene, J., Jenkins, D., Rae, J., & Uren, O. (1975). *Project methods in higher education*. London, United Kingdom: Society for Research into Higher Education.

Ahmann, J.S., & Glock, N.D. (1975). *Measuring and evaluating educational achievement*. Boston, MA: Allyn & Bacon.

Fox, N.J., & Dryden, C. (1991). Medical education and the GCSE generation: A transferable activity-skills programme in medical sociology. *Medical Teacher, 13*, 245-252.

Hitchcock, G. (1986). *Profiles and profiling: A practical introduction*. London, United Kingdom: Longman.

James, M. (1990). Negotiation and dialogue in student assessment and teacher appraisal. In: T. Horton (Ed.). *Assessment debates*. London, United Kingdom: Hodder & Stoughton.

Law, B. (1984). *Uses and abuses of profiling*. London, United Kingdom: Harper & Row.

Miller, C.M.L., & Parlett, M. (1974). *Up to the mark. A study of the examination game*. London, United Kingdom: Society for Research into Higher Education.

Rogers, J. (1989). *Adults learning*. Milton Keynes, United Kingdom: Open University Press.

Streiner, D.L., & Norman, G.R. (1991). *Health measurement scales. A practical guide to their development and use*. Oxford, United Kingdom: Oxford University Press.

Usherwood, T., Joesbury, H., Hannay, D. (1991). Student-directed problem-based learning in general practice and public health medicine. *Medical Education, 25*, 421-429.

Structured Short-Answer Questions: An Alternative Examination Method. Webber, R.H. (United Kingdom). (1992). *Medical Education, 26,* 58-62.

A structured short answer (SSA) examination has been developed for the MSc, Community Health in Developing Countries, to test competence in international public health. Questions can test knowledge or aim to assess problem-solving ability, but have the advantage that the candidates construct their own answer (rather than choosing from pre-formed answers in an MCQ), yet encourage sufficient precision for answers to be easily marked. The SSA more closely reflects participatory teaching and self-directed learning. Illustrated material is widely used.

Performance Evaluation of Graduates from a Community-Based Curriculum: The Housemanship Period at Gezira. Abdel Rahim, I.M., Mustafa, A.E., & Ahmed, B.O. (Sudan). (1992). *Medical Education, 26,* 233-240.

The housemanship performance of the first classes of the University of Gezira Medical School was assessed on 107 occasions by using a questionnaire administered to the senior doctors (consultants) in the units in which they worked and the data, which covered 32% of all housemanship rotations taken by these graduates, were analysed. On a 5-point scale (poor to excellent) the rating of performance for 26 questions was average and above (S=3:+S=4:+S=5) in 95% of instances. The good and excellent rating (S=4+S=5) for the same questions was about 80%. The grand mean for rating of questions in the cognitive, psychomotor and attitudes domain was 4.1, 3.9 and 4.2 out of 5 respectively. The graduates were found to be better off (45%), comparable to (50%) and less than (5%) when compared to others graduates who worked with the same consultants in the past. Results of three general questions inquiring about graduates' practice safety, overall standing and consultants' preference for Gezira graduates had a 95% positive rating. It is concluded that these results provide significant positive answers for some basic questions concerning credibility which are often raised about Gezira and similar schools with innovative medical curricula.

Postgraduate Medical Education: Modifying Trainees' Study Approaches by Changing the Examination. Wakeford, R., & Southgate, L. (United Kingdom). (1992). *Teaching and Learning in Medicine, 4,* 210-213.

The Membership examination of the Royal College of General Practitioners - taken by most U.K. postgraduate trainees planning a career in general practice - was changed in 1990 to include a "Critical Reading Question paper" in an effort to encourage study and criticism of original papers. To measure possible change in physicians' study approaches, questionnaire surveys of samples of registrants for the examination were undertaken in 1990 and 1991 (before and after the change). The use of three learning approaches increased markedly (p<.0001) - critically discussing papers and reading the British Medical Journal and the British Journal of General Practice. The use of two other learning approaches decreased similarly - reading undergraduate-type textbooks (p<.001) and summaries in the free medical press (p<.01). Substantial change in learner behaviour in the desired directions was thus associated with the restructuring of the examination.

Clinical Reasoning and Critical Reasoning

Clinical Reasoning in Medicine and Nursing: Decision Making Versus Problem Solving. Deber, R.A., & Baumann, A.O. (Canada). (1992). *Teaching and Learning in Medicine, 4,* 140-146.

The clinical reasoning process includes two broad components: (a) problem solving (searching for the one "right" answer) and (b) decision making (selecting from several possibilities). Each component requires considerable knowledge and skill; decision making also requires that the values assigned to each potential outcome be ascertained and used. We present a framework for the clinical encounter, with particular emphasis on treatment selection. We then note evidence, including three studies conducted by our research group, to support the view that clinical problem solving is based primarily on pattern recognition following data gathering, rather than an a deterministic rule-based approach. We suggest that a pattern recognition approach, which stresses the importance of a knowledge base as opposed to a set of learned skills, implies a strong potential role for the computer in both medical practice and medical education.

References

Applied Informatics (1990). *ILIAD user manual.* Salt Lake City, UT: Author.

Arkes, H.R., & Hammond, K. (1986). *Judgment and decision making: An interdisciplinary reader.* New York, NY: Cambridge University Press.

Bereiter, C. (1991). Implications of connectionism for thinking about rules. *Educational Researcher, 20,* 10-16.

Bordage, G., & Lemieux, M. (1991). Semantic structures and diagnostic thinking of experts and novices. *Academic Medicine, 66,* S-2.

Christensen, C., Elstein, A.S., Bernstein, L.M., & Balla, J.I. (1991). Formal decision supports in medical practice and education. *Teaching and Learning in Medicine, 3,* 62-70.

De Bliek, R., Miller, R.A., & Masarie, F.E. (1988). *QMR user manual.* Pittsburg, PA: University of Pittsburgh.

Dowie, J., & Elstein, A. (1988). *Professional judgment: A reader in clinical decision making.* New York, NY: Cambridge University Press.

Elstein, A.S., Shulman, L.S., & Sprafka, S.A. (1978). *Medical problem solving: An analysis of clinical reasoning.* Cambridge, MA: Harvard University Press.

Elstein, A.S., Shulman, L.S., & Sprafka, S.A. (1990). Medical problem solving: A ten-year retrospective. *Evaluation and the Health Professions, 13,* 5-36.

Hershey, J.C., & Baron, J. (1987). Clinical reasoning and cognitive processes. *Medical Decision Making, 7,* 203-211.

Joseph, G.M., & Patel, V.L. (1990). Domain knowledge and hypothesis generation in diagnostic reasoning. *Medical Decision Making, 10,* 31-46.

Lesgold, A.M. (1987). Problem solving. In: R.J. Sternberg, & E.E. Smith (Eds.). *The psychology of human thought.* New York, NY: Cambridge University Press.

Newell, A., & Simon, H.A. (1972). *Human problem solving.* Englewood Cliffs, NJ: Prentice Hall.

Norman, G.R. (1988). Problem-solving skills, solving problems and problem-based learning. *Medical Education, 22,* 279-286.

Pople, H.E. (1982). Heuristic methods for imposing structure on ill-structured problems: The structuring of medical diagnostics. In: P. Szolovits (Ed.). *Artificial intelligence in medicine.* Boulder, CO: Westview.

Rabinowitz, M., Lesgold, A.M., & Berardi, B. (1988). Modeling task performance: Rule-based and connectionist alternative. *International Journal of Educational Research, 12,* 35-48.

Ravitch, M.M. (1989). Subjectivity in decision making: Common problems and limitations. *World Journal of Surgery, 12,* 281-286.

Learning Critical Appraisal Skills at the Faculty Level: Methods and Benefits.

Moyer, V.A. (U.S.A.). (1992).*Teaching and Learning in Medicine, 4,* 115-116.

The need to teach students how to critically read the literature is increasingly recognised in medical education. However, few faculty are themselves adept at this skill, and fewer are adept at teaching it. This article describes the use by general paediatric faculty of a journal club format to learn these skills. At the end of the 1-year programme, faculty were more comfortable with practising and teaching critical appraisal. In addition, we found improved communication and increased consistency of clinical management and teaching among the faculty group. The journal club format is a useful approach to learning critical appraisal at the faculty level, with benefits beyond learning a new skill.

References

Bier, D.M., Fulginiti, V.A., & Garfunkel, J.M., et al. (1990). Duplicate publication and related problems (Editorial). *American Journal of Diseases of Children, 144,* 1293-1294.

Department of Clinical Epidemiology and Biostatistics, McMaster University Health Sciences Centre. (1981). How to read clinical journals: To determine etiology or causation. *Canadian Medical Association Journal, 124,* 985-990.

Department of Clinical Epidemiology and Biostatistics, McMaster University Health Sciences Centre. (1981). How to read clinical journals: To distinguish useless or even harmful therapy. *Canadian Medical Association Journal, 124,* 1156-1162.

Department of Clinical Epidemiology and Biostatistics, McMaster University Health Sciences Centre. (1981). How to read clinical journals: To learn about a diagnostic text. *Canadian Medical Association Journal, 124,* 703-710.

Department of Clinical Epidemiology and Biostatistics, McMaster University Health Sciences Centre. (1981). How to read clinical journals: To learn the clinical course and prognosis of disease. x869-872.

Department of Clinical Epidemiology and Biostatistics, McMaster University Health Sciences Centre. (1981). How to read clinical journals: Why to read them and how to start reading them critically. *Canadian Medical Association Journal, 124,* 555-558.

Evans, C.E., Haynes, R.B., Gilbert, J.R., Taylor, D.W., Sackett, D.L., & Johnston, M. (1984). Educational package on hypertension for primary care physicians. *Canadian Medical Association Journal, 130,* 719-722.

Inui, T.S. (1981). Critical reading seminars for medical residents. *Medical Care, 19,* 122-124.

Price, D.S. (1981). The development and structure of the biomedical literature. In: K.S. Warren (Ed.). *Coping with the biomedical literature.* New York, NY: Praeger.

Riegelman, R.K., & Hirsch, R.P. (1989). *Studying a study and testing a test. How to read the medical literature.* Boston, MA: Little, Brown.

Sacket, D.L., Haynes, R.B., Guyatt, G.H., & Tugwell, P. (1991). *Clinical epidemiology: A basic science for clinical medicine.* Boston, MA: Little, Brown.

Schwenk, T.L., & Whitman, N.A. (1987). *The physician as teacher.* Baltimore, MD Williams & Wilkins.

Williamson, J.W., German, P.S., Weiss, R., Skinner, E.A., & Bowes III, F. (1989). Health science information management and continuing education of physicians: A survey of US primary care providers and their opinion leaders. *Annals of Internal Medicine, 110,* 151-160.

Woods, Jr., & Winkel, C.E. (1982). Journal club format emphasizing techniques of critical reading. *Journal of Medical Education, 57,* 799-801.

Community-Based Education

Community-Based Projects in Rural Internships: An Alternative Approach. Pratinidhi, A.K., Joshi, J.K., Bawikar, S.P., & Javadekar, S.J. (India). (1992). *Medical Education, 26,* 368-371.

Supervision of medical interns posted to various primary health centres and rural health training centres by specialists in preventive and social medicine and other clinical disciplines is becoming less and less effective for a number of unavoidable reasons. Because of lack of proper and timely guidance, interns feel that during the 6-month rural internship they do not get enough experiences in community medicine and orient them in the social dynamics of the community, a new approach involving interns in small community-based projects, probably for the first time, was tried on a pilot basis at the Rural Health Training Centre (RHTC), Sirur, a field practice area of B.J. Medical College, Pune, Maharashtra, India. Interns working at RHTC Sirur completed these community-based projects successfully. Identification of problems, study design analysis and drawing conclusions, based on observation, were all undertaken by the interns under the guidance of the staff of the Department of Preventive and Social Medicine, B.J.

Medical College. The opinion poll at the end of the rural internship revealed that 76% of interns considered this experience valuable for improving their knowledge and skills, and 56% thought that interaction during these projects for interns during their rural posting provides them with an opportunity for interaction with the community.

The Family Study: A Model for Integrating the Individual and Community Perspective in Medical Education. Forster, D.P., Drinkwater, C.K., Corradine, A., & Cowley, K. (United Kingdom). (1992). *Medical Education, 26,* 110-115.

The principles of, and experience with a family study and survey undertaken by first-year medical students are reported. The family study is based on the observation made by pairs of students on a selected family, which includes a pregnant mother, in the Newcastle upon Tyne area. These observations include the family context, the pregnancy, the early development of the new-born baby, and the use of health and other services. The family survey acts as a preparation for clinical understanding by emphasizing the individual or family view. In addition, students learn that the collective epidemiological approach provided by the survey can guide the clinical impression gained from the observational study, yet each individual and family remains unique. An early opportunity is therefore provided for students to explore and integrate these two approaches.

Comparison of Volunteer and Full-Time Faculty Performance in a required Third-Year Family Medicine Clerkship. Schwiebert, L.P., Ramsey, C.N., & Davis, A. (U.S.A.). (1992). *Teaching and Learning in Medicine, 4,* 225-232.

The increased number of required family medicine clerkships has created the need for more qualified faculty to serve as preceptors. One solution to the faculty shortage is to use volunteer faculty practising in the private setting. This article describes how volunteer faculty at one institution were selected and trained and compares the performance of volunteer and full-time faculty using several parameters. Student perception of their level of involvement in patient care activities was comparable between private practices and the university site. Students also rated general teaching skills of volunteer and full-time faculty similarly. However, students placed at private practices felt less confident about their acquisition of fundamental clinical skills than did students placed at the university site, and volunteer faculty tended to grade more leniently than did full-time faculty. In general, however, we conclude that volunteer faculty, properly selected and trained, can be a useful and valuable resource in undergraduate family medicine education.

Practical Medical Education in General Practice. Martens, F.M.J., & op 't Root, J.M.H. (The Netherlands). (1992). *Medical Education, 26,* 213-217.

The Medical Faculty of the University of Limburg in Maastricht, The Netherlands pays special attention to extramural care. The extramural profile of the Medical Faculty also manifests itself in the curriculum. Since 1978, a 12-week clerkship in practical medical training in general practice (PMT-GP) has been offered to fifth-year students. The general aim is to acquaint students with general medical aspects, as well as specific primary care aspects of health care. The programme started in the autumn of 1978 with 24 students and 24 GP teachers. At present more than 100 GP teachers, working in about 70 practices, train 120-130 students a year. The model of the PMT-GP system is characterised by six features: a ratio of one GP teacher to one student; autonomous examination by the student of at least 15 patients a week; daily follow-up discussion on the basis of patient records prepared by the students; opportunities for self-study by the student; one tutorial day a week at the Medical Faculty; intensive contacts between the Faculty and GP teachers. Key activities of the PMT-GP include autonomous contacts with patients, written records and daily follow-up discussions with the GP teacher.

Role Modelling: A Case Study in General Practice. Lublin, J.R. (Australia). (1992). *Medical Education, 26,* 116-122.

The effect of role modelling in medical education is frequently mentioned in the literature. This study addresses the issue of role modelling directly through questionnaires to students and interviews with practitioners. A sample of general practitioners taking students on the general practice attachment were asked to identify the attributes of their own role models, and to nominate in turn what attributes they hoped to role model for their students, and students returning from attachment were asked what they wished to emulate in their GP. Analysis of transcripts and questionnaires showed that while GPs mainly remembered personality and teaching ability in their role models, there was congruence between their desire to model good patient relationships to students and students' perceptions that this was the most desirable attribute they saw in GPs. Students also wished to be as skilled and knowledgeable as their GPs. The paper speculates about reasons for the differences and similarities in perception and memory of desirable role model attributes nominated by GPs and by students. It concludes that affect pervades the memory of positive and negative behaviours and attitudes of teachers, and that although role modelling may not be amenable to measurement its importance in shaping behaviour and attitude and its power to influence students should be acknowledged in developmental programmes for medical teachers.

References

Becker, H., Geer, B., Hughes, E., et al. (1961). *Boys in white: Student culture in medical school.* Chicago, IL: University of Chicago Press.

Ficklin, F.L., Browne, V.L., Powell, R.C., & Carter, J.E. (1988). Faculty and house staff members as role models. *Journal of Medical Education, 63,* 392-396.

Gerber, L.A. (1979). The search for clinical role models as a way of coping with clerkship stress. *Journal of Medical Education, 54,* 659-661.

Gerber, L.A. (1982). Factors affecting the choice of a psychiatric career: An experimental study. *Psychiatry Quarterly, 54,* 26-32.

Greganti, M.A. (1990). Where are the clinical role models? *Archives of Internal Medicine, 150,* 259-261.

Irby, D.M. (1986). Clinical teaching and the clinical teacher. *Journal of Medical*

Education, 61, 35-45.

Kitchen, L.W. (1978). Role models (letter). *Journal of Medical Education, 53,* 1007-1008.

Knight, J.A. (1981). *Doctor-to-be: Coping with the trials and triumphs of medical school.* New York, NY: Appleton-Century-Crofts.

Lincoln, Y.S., & Guba, E. (1985). *Naturalistic enquiry.* London, United Kingdom: Sage Publications.

Lublin, J., & Driver, B. (1986). The general practitioner as teacher and role model. *Australian Family Physician, 15,* 1582-1584.

Mattsson, B., Freeman, G.K., Coles, C.R., & Schmedlin, J. (1991). General practice in the undergraduate curriculum: 20 interviews with Southampton final-year students. *Medical Education, 25,* 144-150.

Merkel, W.T., Margolis, R.B., & Smith, R.C. (1990). Teaching humanistic and psychosocial aspects of care: Current practices and attitudes. *Journal of General Internal Medicine, 5,* 34-41.

Plovnick, M.S. (1980). Medical student values, socialisation, and primary care career choices. *Journal of Family Practice, 11,* 323-324.

Rezler, A.G., & Ten Haken, J. (1984). Affect and research in medical education. *Medical Education, 18,* 331-338.

Richter, R.C., & Buck, E.L. (1990). Family practice residents and the elderly: Fostering positive attitudes. *Family Medicine, 22,* 388-391.

Rosenberg, D.A., & Silver, H.K. (1984). Medical students abuse: An unnecessary and preventable cause of stress. *Journal of the American Medical Association, 251,* 739-742.

Sefton, A. (1983). *Survey of medical course, Med IV and V, 1982, pp. 1-10.* Sydney, Australia: Staff-Student Liaison Committee Faculty of Medicine, University of Sydney.

Schwenk, T.L., Sheets, K.J., Marquez, J.T., Whitman, N.A., Davis, W.E., & McClure, C.L. (1987). Where, how, and from whom do family practice residents learn? A multisite analysis. *Family Medicine, 19,* 265-268.

Shuval, J., & Adler, I. (1980). The role of models in professional socialisation. *Social Science in Medicine, 14A,* 5-14.

Silver, H.K. (1982). Medical students and medical school. *Journal of the American Medical Association, 247,* 309-310.

Strain, J.E. (1990). The paediatrician as a role model in the career choice of medical students (letter). *Paediatrics, 85,* 364-365.

Tosteson, D.C. (1979). Learning in medicine. *New England Journal of Medicine, 301,* 690-694.

Vance, R.P. (1989). Role models in pathology. *Archives of Paediatrics and Laboratory Medicine, 113,* 96-101.

Wolf, T.M., Balson, P.M., Faucett, J.M., & Randall, H.M. (1989). A retrospective study

of attitude change during medical education. *Medical Education, 23,* 19-23.

Education - Policy and Administration

Collaboration between Nurses and Physicians: No Longer a Choice. Fagin, C.M. (U.S.A.). (1992). *Academic Medicine, 67,* 295-303.

Collaboration, a relationship of interdependence, requires the recognition of complementary roles. Traditionally, physicians generally have not demonstrated collaboration in their work with nurses; nurses, on the other hand, have more often sought a collaborative relationship. But the rapidly changing, increasingly complex and constraining world of health care requires that doctors, nurses, and the institutions that educate and employ them reevaluate the doctor - nurse relationship and assess the value of making it a more collaborative one. This essay deals with the phenomenon of collaboration, why there are compelling reasons to promote it, the barriers that exist between nurses and physicians in achieving collaborative relationships and strategies to promote change. Comments of experienced observers and summaries of the pertinent research literature are presented.

References

Aiken, L., Smith, H., & Lake, E. (1991). *Effects of organisational innovations in AIDS care on "Burn out" among hospital nurses.* Paper presented at the Annual Meeting of the American Sociological Association, Cincinnati, Ohio.

American Medical Association (1990). Independent nursing practice models. In: *Proceedings of House Delegates, 139th Annual Meeting, June 24-28, 1990.* Chicago, IL: American Medical Association.

Barnum, B. (1989). At New York University, the division of nursing develops a model for nursing and medical school collaboration. *Nursing Health Care, 11,* 89-90.

Bennet, C.L., et al. (1989). The relation between hospital experience and in-hospital mortality for patients with AIDS-related PCP. *Journal of the American Medical Association, 261,* 2975-2979.

DeFede, J.P., Dhanens, B.E., & Keltner, N.L. (1989). Cost benefits of patient-controlled analgesia. *Nursing Management, 20,* 34-35.

Editors of Nursing 91 (1991). The nurse-doctor game. *Nursing 91, 21,* 60-64.

Eubanks, P. (1991). Quality improvement key to changing nurse-M.D. relations. *Hospitals, 65 (8),* 26-30.

Georgopoulos, B.S. (1985). Organisational structure and the performance of hospital emergency services. *Annals Emergency Medicine, 14,* 677-684.

Guidelines for establishing joint or collaborative practice in hospitals: A demonstration project directed by the National Joint Practice Commission (1974). Chicago, IL: Nealy Printing Co.

Katzman, E.M. (1980). Nurses' and physicians' perception of nursing authority. *Journal of Professional Nursing, 5,* 208-214.

Kitz, D.S., McCartney, M., Kissick, J.F., & Townsend, R.J. (1989). Examining nursing personnel costs: Controlled versus non-controlled oral analgesic agents. *Journal of Nursing Administration, 19,* 13-14.

Knaus, W.A., Draper, E.A., Wagner, D.P., & Zimmerman, J.E. (1986). An evaluation of outcome from intensive care in major medical centers. *Annals of Internal Medicine, 104,* 410-418.

Kurtz, M.E. (1980). Behavioral profile of physicians in management roles. In: R. Schenke (Ed.). *Physicians in management.* Tampa, FL: American Academy of Medical Directors.

Makadon, H.J., & Gibbons, T. (1985). Nurses and physcians: Prospects for collaboration. *Annals of Internal Medicine, 103,* 134-135.

Mechanic, D., & Aiken, L.H. (1982). A cooperative agenda for medicine and nursing. *New England Journal of Medicine, 307,* 747-750.

O-Brian-D'Antonio, P. (1987). *Tension at the bedside.* Paper presented at the American Association of the History of Medicine, 60th Annual Meeting.

Prescott, P.A., & Brown, S.A. (1985). A physician-nurse relationship. *Annals of Internal Medicine, 103,* 127-133.

Robert Wood Johnson Foundation (1982). *Medical practice in the United States: A special report.* Princeton, NJ: The RWJ Foundation.

Robert Wood Johnson Foundation/Pew Charitable Trust Program. *Steamlining hospital nursing: A program to improve patient care* (In press).

Smits, H.L. (1982). Manpower for long-term care: Two simple suggestions. *Nat. J., 13,* 807-809.

Stein, L.I. (1967). Doctor-nurse game. *Archives of General Psychiatry, 16,* 699-703.

Stein, L.I., Watts, D.T., & Howell, T. (1990). The doctor-nurse game revisited. *New England Journal of Medicine, 322,* 546-549.

Weiss, S.J. (1983). Role differentiation between nurse and physician: Implications for nursing. *Nursing Research 32,* 133-139.

Williams, M.E., Williams, T.F., Zimmer, J.G., Hall, W.J., & Podgorski, M.S. (1987). How does the team approach to outpatient geriatric evaluation compare with traditional care: A report of a randomized controlled trial. *Journal of American Geriatric Society, 35,* 1071-1078.

The "Health of the Public" Approach to Medical Education. Evans, J.R. (U.S.A.). (1992). *Academic Medicine, 67,* 719-723.

The author examines the growing discontinuity between medical education and the general health needs of society. He explains and illustrates this failure of the academic medical centre in several ways; by a parable; by reporting the results of his informal survey of faculty and residents; by presenting the findings of an international conference on medical education; and by giving a detailed description of the design and impact of the "Health of the Public" programme, launched by the Pew Charitable Trusts and the Rockefeller Foundation in 1986. He maintains that there is an imbalance in the training of physicians and other health professionals, because academic medical centres are dominated by supply-side thinking - which is driven by new knowledge and technology and the resulting need to find patients to fit the interests and technical capabilities of specialists and the equipment and services of hospitals - and have underemphasized demand-side thinking, which concerns the patient and the health expectations, needs, and trends in the community. The author maintains that academic medical centres can continue to achieve the recognition they seek, but can do so by making the changes needed to better balance the driving forces of supply and demand. Only by doing this will they fulfill their fundamental mission of fostering the health of the public.

A National, Interdisciplinary Consortium of Primary Care Organisations to Promote the Education of Generalist Physicians. Murray, J.L., Wartman, S.A., & Swanson, A.G. (U.S.A.). (1992). *Academic Medicine, 67*, 8-11.
This essay begins with the history from 1989 through late 1991 of the Primary Care Organisations' Consortium (PCOC), a group of representatives form nine major academic and professional organisations for primary care specialities. The PCOC was formed to discuss what might be done to reverse the alarming decrease in the number of medical students who choose primary care specialties. The article reviews some of the conditions that many believe have caused the continuing move away from primary care careers, and concludes with a description of the PCOC's programme to encourage medical students to choose primary care careers, and the new opportunities for collaborative planning of such programmes that are now available to medical schools. The PCOC's success in defining its programme is due to a process of interdisciplinary planning and collaboration at the national level that hopefully will facilitate similar collaboration among medical school departments.

Education in Family and Community Health: The Challenge faced by a new Medical School. Saha, A., Colle A.F., & Linder, B.M.W. (Oman). (1992). *Medical Education, 26*, 478-481.
This paper describes the efforts of the Department of Family and Community Health at Sultan Qaboos University in providing opportunities for the development of "hands-on" problem-solving skills appropriate for Oman. The curriculum of the Department is discussed, highlighting the unusual emphasis of this discipline in both the preclinical and clinical curriculum of the College of Medicine. The importance of continuous assessment and supervision of students is discussed. Course-work in the preclinical curriculum of the Department is kept to a minimum. Field-work forms an important part of preclinical training, where application and problem-based learning are emphasized. During the clinical years the students are exposed to an integrated series of lectures and practicals covering core knowledge in clinical medicine. Practical clinical training, over a total period of 15 weeks, takes place at a variety of sites where common problems in primary health care in Oman are handled by students under supervision.

The Contribution of General Practice to Medical Education: Expectations and Fulfilment. Lloyd, M.H., Rosenthal, J.J. (United Kingdom). (1992). *Medical Education, 26,* 488-496.

The aim of this study was to discover what students expected to learn during their fourth-year general practice attachment, to compare this with their GP tutors' expectations, and to determine the extent to which the students' expectations were fulfilled. Questionnaires were used to gather this information; students completed them on the first and last days of the 4-week attachment and tutors shortly after the attachment. Students and their tutors had the highest expectations of the course in helping to raise awareness of the psychological and social aspects of ill health and develop clinical decision-making and management skills. At the end of the course students thought that they had gained most in these areas. Both students and tutors had lower expectations of the course helping to develop physical examination and practical skills and to improve knowledge in certain clinical areas. These were also rated lowest in terms of fulfilment. This study was carried out at a time when it is being suggested that more undergraduate teaching should take place in general practice and that this could include the teaching of practical skills and clinical subjects traditionally associated with hospital based teaching. The results suggest that the expectations of students and GP tutors would need to be modified, as well as extra resources provided, if there is to be a shift in teaching towards the community.

Sustaining and Rewarding Clinical Teaching. Biggs, J.A., & Price, D.A. (Australia). (1992). *Medical Education, 26,* 264-268.

High standards of clinical teaching are essential in the training of medical students but greater prominence needs to be given to its importance. Strategies are described by which one medical school has raised the awareness of clinical teaching and supported those who deliver it.

Ethics

Teaching Bioethics to Medical Students: The Newcastle Experience. Mitchell, K.R., Lovat, T.J., & Myser, C.M. (Australia). (1992). *Medical Education, 26,* 290-300.

Over the past two decades in the U.S.A., bioethics has become an accepted component of medical education, whereas in Australia, 10 years or even less would encompass the history of most existing programmes. Given the legendary conservatism of medical schools in Australia and the intractability of the medical curriculum, this is still a remarkable achievement. But does the teaching of bioethics change the thinking and/or decision-making behaviour of medical students or practitioners exposed to such sources? Those involved know only too well how difficult such courses are to design and evaluate, since the connection between ethics education and practice is not known and may never be demonstrated to the satisfaction of critics.

Critics not only seek answers to the questions of wether the teaching of bioethics makes a difference, which is a fair question, but they also seek answer to the question of whether bioethics should be taught in medical schools. Can bioethics be taught? Whose bioethics is being taught? What does the trained bioethicist contribute? Some of these questions arise from misunderstanding and some reflect the still too dominant view in medical schools which divides disciplines into those which provide "practical skills", and those which contribute only theoretical and therefore peripheral knowledge.

The authors will address these questions in the light of their experience at Newcastle, Australia, where the Faculty of Medicine has been teaching bioethics for over a decade.

A Conference on Ethics for Obstetric and Gynaecological Clerkship Students.

Strong, C., Beckmann, C.R.B., & Dacus, J.V. (U.S.A.). (1992). *Medical Education, 26,* 354-359.

Integrating the teaching of medical ethics into medical students' clinical education is challenging, given the competing demands on students' time and the need for teaching to be clinically relevant. This paper describes a model programme for incorporating ethics teaching into the obstetrics and gynaecology clerkship for third-year medical students. The programme is taught by two attending teachers and a medical ethicist with experience in teaching in the clinical setting of obstetrics and gynaecology. Objective pre-tests and post-tests showed substantial improvement in students' knowledge, and student feedback has been very positive.

References

American Board of Internal Medicine, Subcommittee on Evaluation of Humanistic Qualities in the Internist (1983). Evaluation of humanistic qualities in the internist. *Annals of Internal Medicine, 99,* 720-724.

American Board of Pediatrics, Medical Ethics Subcommittee (1987). Teaching and evaluation of interpersonal skills and ethical decision making in pediatrics. *Pediatrics, 79,* 829-833.

Association of Professors of Gynecology and Obstetrics, Task Force on Medical Ethics (1990). *Exploring issues in obstetric and gynecologic medical ethics.* Washington, DC: Association of Professor of Gynecology and Obstetrics.

Beckmann, C.R., Barzansky, B.M., Eden, R.D., Ling, F.W., Spellacy, W.N., & Waxman B. (1987). Survey of departments of obstetrics and gynecology in US and Canadian medical schools, 1965 to 1985. *Journal of Medical Education, 62,* 765-767.

Bickel, J. (1986). *Integrating human values teaching programs into medical students' clinical education.* Washington, DC: Association of American Medical Colleges.

Bickel, J. (1987). Human values teaching programs in the clinical education of medical students. *Journal of Medical Education, 62,* 369-378.

Boyd, K.M. (Ed.) (1987). *Report of a working party on the teaching of medical ethics.* Sir Desmond Pond, Chairman (The Pond Report). London, United Kingdom: Institute of Medical Ethics Publications.

British Medical Association (1986). *Minutes 337 and 338. Resolution of British Medical Association Annual Representative Meeting, 1986.* London, United Kingdom: British

Medical Assocation.

Calman, K.C., & Downie, R.S. (1987). Practical problems in the teaching of ethics to medical students. *Journal of Medical Ethics, 13*, 153-156.

Clouser, K.D. (1980). *Teaching bioethics: Strategies, problems, and resources.* Hastings-on-Hudson, NY: Institute of Society, Ethics and the Life Sciences.

Culver, C.M., Clouser, K.D., Gert, B., Brody, H., Fletcher, J., Jonsen, A., Kopelman, L., Lynn, J., Siegler, M., & Wikler, D. (1985). Basic curricular goals in medical ethics. *New England Journal of Medicine, 312*, 253-256.

Doxiadis, S.A. (1988). The teaching of medical ethics. *Medical Education, 22*, 85-87.

Elkins, T.E., Strong, C., & Dilts, P.V. (1986). Teaching of bioethics within a residency program in obstetrics and gynecology. *Obstetrics and Gynecology, 67*, 339-343.

Etzel, S.I. (1980). Medical education in the United States, 1978-1979. *Journal of the American Medical Association, 243*, 857-858.

Evans, D. (1987). Health care ethics: A pattern for learning. *Journal of Medical Ethics, 13*, 127-131.

Grodin, M.A. (1986). A seminar on medical ethics for third-year students in a pediatrics clerkship. *Journal of Medical Education, 61*, 613.

Hebert, P., Meslin, E.M., Dunn, E.V., Byrne, N., & Reid, S.R. (1990). Evaluating ethical sensitivity in medical students: Using vignettes as an instrument. *Journal of Medical Ethics, 16*, 141-145.

Howe, K.R. (1987). Medical students' evaluations of different levels of medical ethics teaching: Implications for curricula. *Medical Education, 21*, 340-349.

Howe, K.R., & Jones, M.S. (1984). Techniques for evaluating student performance in a preclinical medical ethics course. *Journal of Medical Education, 59*, 350-352.

Irwin, W.G., McClelland, R.J., Stout, R.W., & Stchedroff, M. (1988). Multidisciplinary teaching in a formal medical ethics course for clinical students. *Journal of Medical Ethics, 14*, 125-128.

Liaison Committee on Medical Education (1985). *Functions and structure of a medical school.* Washington, DC: Association of American Medical Colleges.

Miles, S.H., Lane, L.W., Bickel, J., Walker, R.M., & Cassell, C.K. (1989). Medical ethics education: Coming of age. *Academic Medicine, 64*, 705-714.

Muller, S. (chairman) (1984). Physicians for the Twenty-First Century. Report of the Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. *Journal of Medical Education, 59 (2)*, 184.

Olukoya, A.A. (1984). A workshop on medical ethics at the College of Medicine, Lagos University. *Journal of Medical Ethics, 10*, 199-200.

Pellegrino, E.D. (1979). The anatomy of clinical judgments: Some notes on right reason and right action. In: H.T. Engelhardt Jr., S.F. Spicker, & B. Towers (Eds.). *Clinical judgment: A critical appraisal.* Dordrecht, The Netherlands: D. Reidel.

Pellegrino, E.D., Hart, R.J., Henderson, S.R., Loeb, S.E., & Edwards, G. (1985). Relevance and utility of courses in medical ethics: A survey of physicians' perceptions. *Journal of the American Medical Association, 253*, 49-53.

Pellegrino, E.D. (1989). Teaching medical ethics: Some persistent questions and some responses. *Academic Medicine, 64,* 701-703.

Perkins, H.S. (1989). Teaching medical ethics during residency. *Academic Medicine, 64,* 262-266.

Seedhouse, D.F. (1991). Health care ethics teaching for medical students. *Medical Education, 25,* 230-237.

Shelp, E.E., Russell, M.L., & Grose, N.P. (1981). Students' attitudes to ethics in the medical school curriculum. *Journal of Medical Ethics, 7,* 70-73.

Siegler, M. (1978). A legacy of Osler: Teaching clinical ethics at the bedside. *Journal of the American Medical Association, 239,* 951-956.

Siegler, M. Rezler, A.G., & Connell, K.J. (1982). Using simulated case studies to evaluate a clinical ethics course for junior students. *Journal of Medical Education, 57,* 380-385.

Ten Have, H., & Essed, G. (1989). An experimental case-conference programme for obstetrics and gynecology clinical students. *Journal of Medical Ethics, 15,* 94-98.

Veatch, R.M., & Sollitto, S. (1976). Medical ethics teaching: Report of a national medical school survey. *Journal of the American Medical Association, 235,* 1031-1033.

Assessment of Ethical Decisions and Values. Rezler A.G., Schwartz, R.L., Obenshain, S.S., Lambert, P., Gibson, J.McI., & Bennahum, D.A. (U.S.A.). (1992). *Medical Education, 26,* 7-16.

The development and pilot testing of the Professional Decisions and Values Test (PDV) is described. The PDV is designed to assess how ethical conflicts are dealt with by medical and law students and which moral values motivate them. Data from two consecutive classes of entering medical and law students are presented and their action tendencies and ethical values are compared. The findings support the construct validity of the test. Regarding reliability, stability over time is present for action tendencies but not for values. Perhaps the ethical values of entering medical and law students do not become stable until later. Change in ethical values can be studied with the PDV for groups, not individuals, during the first year of professional education.

References

Bebeau, M.J., Rest, J.R., & Yamoor, C.M. (1985). Measuring dental students' ethical sensitivity. *Journal of Dental Education, 49,* 225-235.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20,* 37-46.

Delbecq, A., & Gill, S.L. (1985). Justice as a prelude to teamwork in medical centers. *Health Care Management Review, 10,* 53-59.

Glass, G., & Stanley, J. (1970). *Statistical methods in education and psychology.* Englewood Cliffs, NJ: Prentice-Hall.

Hulka, B.S., Kupper, L.L., Cassel, K.C., & Thompson, S.J. (1971). A method for measuring physician awareness of patient concerns. *HSMHA Health Report, 86,* 741-

751.

Jacobson, J.A., Tolle, S.W., Stocking, C., & Siegler, M. (1989). Internal medicine residents' preferences regarding medical ethics education. *Academic Medicine, 64,* 760-764.

Jordan, A., et al. (1980). *Psychological, cognitive and affective correlates of two experimental examinations of medical student interpersonal skills.* Paper presented at the Eastern Educational Research Association Meeting, New York.

Kohlberg, L. (1981). *The philosophy of moral development: Moral stages and the ideal of justice.* San Francisco, CA: Harper and Row.

Rest, J.R. (1979). *Development in judging moral issues.* Minneapolis, MN: University of Minnesota Press.

Rest, J.R. (1983). Morality. In: P.H. Mussen (Ed.). *Handbook of child psychology.* New York, NY: Wiley.

Smith, N.L. (1985). Some characteristics of moral problems in medical centers. *Health Care Management Review, 10,* 53-59.

Steininger, M., Newell, J.D., & Garcia, L.T. (1984). *Ethical issues in psychology.* Homewood, IL: Dorsey.

Stolman, C.J., & Doran, R.L. (1982). Development and validation of a test instrument for assessing value preferences in medical ethics. *Journal of Medical Education, 57,* 170-179.

Zubin, J. (1966). Nomographs for the testing of statistical significance of differences between percentages. In: A.N. Oppenheid (Ed.). *Questionnaire design and attitude measurement.* New York, NY: Basic Books.

Evaluation of Teaching Medical Ethics by an Assessment of Moral Reasoning. Self, D.J., Baldwin Jr., D.C., & Wolinsky, F.D. (U.S.A.). (1992). *Medical Education, 26,* 178-184.

This study assessed the hypothesis that the formal teaching of medical ethics promotes a significant increase in the growth and development of moral reasoning in medical students. Results indicated a statistically significant increase ($p < .0005$) in the level of moral reasoning of students exposed to a medical ethics course compared to the control group that was not exposed to the medical ethics course. When the post-test scores were adjusted by subtracting the pretest scores, the differences were even more significant ($p \leq .0002$). This study confirmed similar findings of another study using a different instrument of assessment. Brief discussion is given of the fundamental premise that the appropriate function of teaching medical ethics in our modern pluralistic society is to improve students' moral reasoning about value issues regardless of what their particular set of moral values happens to be.

References

Alozie, C.F. (1976). *An analysis of the interrelationship of two measures used in the measurement of moral judgment development: The Kohlberg Judgment Interview and the Rest Defining Issues Test.* Doctoral dissertation. Minneapolis, MN: University of Minneapolis.

Baldwin Jr., D.C., Daughtery, S.F., & Self, D.J. (1991). Changes in moral reasoning during medical school. *Academic Medicine, 66 (Suppl.),* 1-3.

Barnard, D. (1988). Residency ethics teaching: A critique of current trends. *Archives of Internal Medicine, 148,* 1836-1838.

Beauchamp, T.L., & Childress, J.F. (1989). *Principles of biomedical ethics.* Oxford, United Kingdom: Oxford University Press.

Bickel, J. (1986). *Integrating human values teaching programs into medical students' clinical education.* Washington, DC: Association of American Medical Colleges.

Bouford, J.I., & Carson, R.A. (Project Directors) (1984). *The teaching of humanities and human values in primary care residency training.* McLean, VA: Society for Health and Human Values.

Camus, A. (1948). *The plague* (translated by S. Gilbert). New York, NY: Alfred Knopf Inc.

Colby, A., & Kohlberg, L. (1987). *The measurement of moral judgment: Vol. I. Theoretical foundations and research validation.* New York, NY: Cambridge University Press.

Culver, C., Clouser, D., Gert, B. Brody, H., Fletcher, J., Jonsen, A., Kopelman, L., Lynn, J., Siegler, M., & Wikler, D. (1985). Basic curricular goals in medical ethics. *New England Journal of Medicine, 312,* 253-256.

Dobrin, A. (1989). Ethical judgments of male and female social workers. *Social Work, 34,* 451-455.

Gibbs, J.C., & Widaman, K.F. (1982). *Social intelligence: Measuring the development of sociomoral reflection.* Englewood Cliffs, NJ: Prentice-Hall.

Gilligan, C. (1987). Moral orientation and moral development. In: E.F. Kittay, & D.T. Meyers (Eds.). *Women and moral theory.* New York, NY: Rowman & Littlefield Publishers Inc.

Gilligan, C., & Attanucci, J. (1988). Two moral orientations: Gender differences and similarities. *Merill-Palmer Quarterly, 34,* 223-237.

Gilligan, C., Johnston, D.K., & Miller, B. (1988). *Moral voice, adolescent development, and secondary education: A study at the Green River School.* Cambridge, MA: Center for the Study of Gender, Education, and Human Development of the Harvard Graduate School of Education.

Glover, J., Ozar, D., & Thomasma, D. (1986). Teaching ethics on rounds: The ethicist as teacher, consultant and decision-maker. *Theoretical Medicine, 7,* 13-32.

Goldman, S.A., & Arbuthnot, J. (1979). Teaching medical ethics: The cognitive-developmental approach. *Journal of Medical Ethics, 5,* 170-180.

Kohlberg, L. (1976). Moral stages and moralization: The cognitive-developmental approach. In: T. Lictona (Ed.). *Moral development and behavior.* New York, NY: Holt, Rinehart and Winston.

Kohlberg, L. (1984). *Essays on moral development: Vol. II. The psychology of moral development.* San Francisco, CA: Harper & Row.

Noddings, N. (1984). *Caring: A feminine approach to ethics and moral education.* Los Angeles, CA: University of California Press.

Pellegrino, E.D., & McElhinney, T.K. (1982). *Teaching ethics, the humanities, and human values in medical schools: A ten-year overview.* Washington, DC: Society for Health and Human Values.

Rest, J.R. (1979). *Development in judging moral issues.* Minneapolis, MN: University of Minnesota Press.

Rest, J.R. (1986). *Moral development: Advances in research and theory.* New York, NY: Praeger.

Rest, J.R. (1988). Can ethics be taught in professional schools? The psychological research. *Ethics: Easier Said Than Done, 1,* 22-26.

Self, D.J., (Ed.) (1978). *The role of the humanities in medical education.* Norfolk, VA: Teagle & Little, Incl.

Self, D.J. (1988). The pedagogy of two different approaches to humanistic medical education: Cognitive vs. affective. *Theoretical Medicine, 9,* 227-236.

Self, D.J., Jecker, N.S., & Baldwin Jr., D.C. (1991a). A preliminary study of the moral orientations of justice and care among graduating medical students. *Academic Medicine* (submitted to the editor).

Self, D.J., Jecker, N.S., Baldwin Jr., D.C., & Shadduck, J.A. (1991b). Moral orientations of justice and care among veterinarians entering veterinary practice. *Journal of the American Veterinary Medical Association, 199,* 569-573.

Self, D.J., Safford, S.K., & Shelton, G.C. (1988). A comparison of the general moral reasoning of small animal veterinarians vs. large animal veterinarians. *Journal of the American Veterinary Medical Association, 193,* 1509-1512.

Self, D.J., Wolinsky, F.D., & Baldwin Jr., D.C. (1989). The effect of teaching medical ethics on moral reasoning. *Academic Medicine, 64,* 755-759.

Self, D.J., Schrader, D.E., Baldwin Jr., D.C., Root, S.K., Wolinsky, F.D., & Shadduck, J.A. (1991c). Study of the influence of veterinary medical education on the moral development of veterinary students. *Journal of the American Veterinary Medical Association, 198,* 782-787.

Self, D.J., Schrader, D.E., Baldwin Jr., D.C., & Wolinsky, F.D. (1991d). A pilot study of the relationship of medical education and moral development. *Academic Medicine, 66,* 629.

Snarey, J.R. (1985). Cross-cultural universality of sociomoral development: A critical review of Kohlbergian research. *Psychological Bulletin, 97,* 202-232.

Sontag, S. (1978). Illness as a metaphor. New York, NY: Farrar, Straus and Giroux.

Sun, T., & Self, D.J. (1985). Medical ethics programs in family practice residencies. *Family Medicine, 17,* 99-102.

Walker, L.J. (1985). Sex differences in the development of moral reasoning: A critical review. *Child Development, 55,* 677-691.

Problem-Based Learning

The Psychological Basis of Problem-Based Learning: A Review of the Evidence.

Norman, G.R., & Schmidt, H.G. (Canada, The Netherlands). (1992). *Academic Medicine, 9*, 557-565.

Several potential advantages for students' learning are claimed for problem-based learning (PBL). Students in PBL curricula may be more highly motivated; they may be better problem solvers and self-directed learners; they may be better able to learn and recall information; and they may be better able to integrate basic science knowledge into the solutions of clinical problems. Although some of these claims find theoretical support from the literature on the psychology of learning, to date there has been no review of the experimental evidence supporting the possible differences in students' learning that can be attributed to PBL. In this review article, the authors examine each claim critically in the light of that evidence. They conclude that (1) there is no evidence that PBL curricula result in any improvement in general, content-fee problem-solving skills; (2) learning in a PBL format may initially reduce levels of learning but may foster, over periods up to several years, increased retention of knowledge; (3) some preliminary evidence suggests that PBL curricula may enhance both transfer of concepts to new problems and integration of basic science concepts into clinical problems; (4) PBL enhances intrinsic interest in the subject matter; and (5) PBL appears to enhance self-directed learning skills, and this enhancement may be maintained.

References

Allen, S.W., Norman, G.R., & Brooks, L.R. (1991). Experimental studies of learning dermatologic diagnosis: The impact of examples. *Teaching and Learning in Medicine, 4*, 35-44.

Anderson, R.C., & Biddle, W.B. (1975). On asking people questions about what they are reading. In: G.H. Bower (Ed.). *The psychology of learning and motivation.* New York, NY: Academic Press.

Barrows, H.S., & Tamblyn, R.M. (1980). *Problem-based learning.* New York, NY: Springer Publishing.

Barrows, H.S. (1984). A specific, problem-based, self-directed learning method designed to teach medical problem-solving skills, self-learning skills and enhanced knowledge retention and recall. In: H.G. Schmidt, & M.L. De Volder (Eds.). *Tutorials in problem-based learning.* Assen, The Netherlands: Van Gorcum.

Barrows, H.S. (1990). Inquiry: The pedagogical importance of a skill central to clinical practice. *Medical Education, 24*, 3-5.

Blumberg, P., & Michael, J.A. (1991). The development of self-directed learning behaviors in a partially teacher-centered, problem-based learning curriculum. *Teaching and Learning in Medicine, 4*, 3-8.

Boshuizen, H.P.A., Schmidt, H.G., & Wassamer, I. (1990). *Curriculum style and the integration of biomedical and clinical knowledge.* Paper presented at the Second

International Symposium on Problem-Based Learning, Yogyakarta, Indonesia.

Bransford, J.D., & Johnson, M.K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behavior, 11*, 717-726.

Brooks, L.R. (1987). Decentralized control of categorization: The role of prior processing episodes. In: U. Nasser (Ed.). *Concepts and conceptual development.* Cambridge, United Kingdom: Cambridge University Press.

Brooks, L.R., Allen, S.W., & Norman, G.R. (1991). Rule and instance-based inference in medical diagnosis. *Journal of Experimental Psychology: General, 120*, 278-287.

Bruner, J.S. (1961). The act of discovery. *Harvard Educational Review, 31*, 21-32.

Case, S.M., & Swanson, D.B. (In press). Extended matching items: A practical alternative to free-response questions. *Teaching and Learning in Medicine.*

Catrambone, R., & Holyoak, K.J. (1989). Overcoming contextual limitations on problem-solving transfer. *Journal of Experimental Psychology: Learning, Memory and Cognition, 15*, 1147-1156.

Charness, N. (1980). Aging and skilled problem solving. *Journal of Experimental Psychology: General, 109*, 21-38.

Day, S.C., Norcini, J.J., Webster, G.D., Viner, E.D., & Chirico, A.M. (1988). The effect of changes in medical knowledge on examination performance at the time of recertification. In: D.S. Dabney (Compiler). *Research in medical education: 1988. Proceedings of the Twenty-seventh Annual Conference.* Washington, DC: Association of American Medical Colleges.

De Groot, A.D. (1946). *Het denken van den schaker (Thinking process in chess players).* Den Haag, The Netherlands: Noord Holland.

De Volder, M.L., Schmidt, H.G., Moust, J.H.C., & De Grave, W.S. (1986). Problem-based learning and intrinsic motivation. In: J.H.C. van der Berchen, Th.C.M. Bergen, & E.E.I. de Bruyn (Eds.). *Achievement and task motivation.* Lisse, The Netherlands: Swets & Zeitlinger and Swets North America.

Duncker, K. (1945). Problem solving. *Psychology Monographs, 58*, 270.

Eisenstaedt, R.S., Barry, W.E., & Glanz, K. (1990). Problem-based learning: Cognitive retention and cohort traits of randomly selected participants and decliners. In: M. Brownel Anderson (Compiler): *Research in medical education: 1990. Proceedings of the Twenty-ninth Annual Conference.* Washington, DC: Association of American Medical Colleges.

Elstein, A.S., Shulman, L.S., & Sprafka, S.A. (1978). *A medical problem solving: An analysis of clinical reasoning.* Cambridge, MA: Harvard University Press.

Franks, J.J., Bransford, J.D., & Auble, P.M. (1982). The activation and utilisation of knowledge. In: C.R. Puff (Ed.). *Handbook of research methods in human memory and cognition.* New York, NY: Academic Press.

Gick, M.L., & Holyoak, K.J. (1980). Analogical problem solving. *Cognitive Psychology, 12*, 306, 355.

Gick, M.L., & Holyoak, K.J. (1983). Schema induction and analogical transfer. *Cognitive Psychology, 15,* 1-38.

Godden, D.R., & Baddely, A.D. (1975). Context-dependent memory in two natural environments: On land and underwater. *British Journal of Psychology, 66,* 325-332.

Hassebrock, F., & Prietula, M.J. (1990). *Autobiographical memory in medical problem-solving.* Paper presented at the American Educational Research Association meeting, New Orleans, Louisiana.

Hayes, J.R., & Simon H.A. (1977). Psychological differences among problem isomorphs. In: N.J. Castellan, D.B. Pison, & G.P. Potts (Eds.). *Cognitive theory.* Hillsdale, NJ: Erlbaum.

Hunt, J. McV. (1971). Intrinsic motivation: Information and circumstances. In: H.M. Schroder, & P. Suedfeld (Eds.). *Personality theory and information processing.* New York, NY: Ronald.

Johnson, D.W., & Johnson, R.T. (1979). Conflict in the classroom: Effects of controversy on learning. *Review of Educational Research, 49,* 51-69.

Lepper, M.D., & Greene, D. (1975). Turning play into work: Effects of adult surveillance and extrinsic rewards on children's intrinsic motivation. *Journal of Personality and Social Psychology, 31,* 479-486.

Martensen, D., Eriksson, H., & Ingelman-Sundberg, M. (1985). Medical chemistry: Evaluation of active and problem-oriented teaching methods. *Medical Education, 19,* 34-42.

McAuley, R.G., & Henderson, H.W. (1984). Results of the peer assessment program of the College of Physicians and Surgeons of Ontario. *Canadian Medical Association Journal, 131,* 557-561.

McGuire, C.H., & Babbott, D. (1967). Simulation technique in the measurement of problem-solving skills. *Journal of Educational Measurement, 4,* 1-10.

Muller, S. (Chairman). (1984). Physicians for the Twenty-First Century: Report of the Project Panel on the General Professional Education of the Physician and College Preparation for Medicine. *Journal of Medical Education, 59,* Part 2.

Needham, D.R., & Begg, I.M. (1991). Problem-oriented training promotes spontaneous analogical transfer. Memory-oriented training promotes memory for training. *Memory & Cognition, 19,* 543-557.

Neufeld, V.R., Norman, G.R., Barrows, H.S., & Feightner, J.W. (1981). Clinical problem-solving by medical students: A longitudinal and cross-section analysis. *Medical Education, 15,* 311-322.

Newell, A., & Simon, H.A. (1972). *Human problem solving.* Englewood Cliffs, NJ: Prentice-Hall.

Norman, G.R. (1988). Problem solving skills, solving problems and problem-based learning. *Medical Education, 22,* 279-286.

Norman, G.R., Patel, V.L., & Schmidt, H.G. (1990). Clinical inquiry and scientific inquiry. *Medical Education, 24,* 396-399.

Patel, V.R., Groen, G.J., & Norman, G.R. (1991). Effects of conventional and problem-based medical curricula on problem solving. *Academic Medicine, 66,* 380-389.

Perkins, D.N., & Saloman, G. (1989). Are cognitive skills context bound? *Educational Research, 18,* 16-25.

Polya, G. (1957). *How to solve it.* New York, NY: Garden City.

Schmidt, H.G. (1982). *Activatie van voorkennis, intrinsieke motivatie en de verwerking van tekst. (Activation of prior knowledge, intrinsic motivation, and text processing).* Apeldoorn, The Netherlands: Van Walraven.

Schmidt, H.G. (1983). Intrinsieke motivatie en studieprestatie: Enkele verkennende onderzoekingen. (Intrinsic motivation and achievement: Some investigations). *Pedagogische Studiën, 60,* 385-395.

Schmidt, H.G. (1983). Problem-based learning: Rationale and description. *Medical Education, 17,* 11-16.

Schmidt, H.G. (1984). Activatie van voorkennis en tekstverwerking. (Activation of prior knowledge and text processing). *Nederlands Tijdschrift voor Psychologie, 39,* 335-347.

Schmidt, H.G., Dauphinee, D.G., & Patel, V.L. (1987). Comparing the effects of problem-based and conventional curricula in an international sample. *Journal of Medical Education, 62,* 305-315.

Schmidt, H.G., De Grave, W.S., De Volder, M.L., Moust, J.H.C., & Patel, V.L. (1989). Explanatory models in the processing of science text: The role of prior knowledge activation through small-group discussion. *Journal of Educational Psychology, 81,* 610-619.

Schmidt, H.G., Norman, G.R., & Boshuizen, H.P. (1990). A cognitive perspective on medical expertise: Theory and implications. *Academic Medicine, 65,* 611-621.

Shin, J.H., Haynes, R.B., & Johnston, M. (1991). *The effect of problem-based self-directed undergraduate education on life-long learning.* Paper presented at the Canadian Society for Clinical Investigation meeting, Montreal, Canada.

Siamecki, R.C., & Graf, P. (1978). The generation effect: Delineation of a phenomenon. *Journal of Experimental Psychology: Learning, Memory and Cognition, 4,* 592-604.

Sibley, J.C., et al. (1982). A randomized trial of continuing medical education. *New England Journal of Medicine, 306,* 511-515.

Spilich, G.J., Vesonder, G.T., Chiesi, H.L., & Voss, J.F. (1972). Text processing of domain-related information for individuals with high and low domain knowledge. *Journal of Verbal Learning and Verbal Behavior, 18,* 352-373.

Tans, R.S., Schmidt, H.G., Schade-Hoogeveen, B.E.J., & Gijselaers, W.H. (1986). Sturing van het onderwijsleerproces door middel van problemen: Een veldexperiment. (Directing the learning process by means of problems: A field experiment). *Tijdschrift voor Onderwijsresearch, 11,* 35-46.

Walton, H.J., & Matthews, M.B. (1989). Essentials of problem-based learning. *Medical Education, 23,* 542-558.

From Traditional to Problem-Based Learning: A Case Report of Complete Curricu-

lum Reform. Des Marchais, J.E., Bureau, M.A., Dumais, B., & Pigeons, G. (Canada). (1992). *Medical Education, 26,* 190-199.

The Sherbrooke School of Medicine, Quebec, has restructured its entire curriculum to make problem-based learning (PBL) the main instructional format. This complete reform is explained both in terms of process and content. The curriculum problems were clearly identified and overcome by a major structural shift-over following the stages of a strategic planning of change. Implementation over a period of 7 years is described according to a four-stage framework: need for change; selection of the PBL solution; planning for implementation; and the full-scale adoption of the PBL method. The programme is described in relation to the congruence of goals, learning and evaluation activities. Initial impact on student learning and evaluation, attracting better quality students, academic staff roles, and on financing the operation are discussed. Changing the undergraduate programme has become an institutional project directed by the Office of the Dean.

References

Abrahamson, S. (1977). Disease of curriculum. *Journal of Medical Education, 53,* 951-957.

Abrahamson, S. (1990). *A guide to awareness and evaluation of humanistic qualities in the internist.* Philadelphia, PA: American Board of Internal Medicine.

Association of American Medical Colleges. (1984). *Physicians for the twenty-first century: Report of the Panel on the General Professional Education of the Physician and College Preparation for Medicine.* Washington, DC: Association of American Medical Colleges.

Barbeau, D., Quesnel, J., & Des Marchais, J. (1999). Students' perception after one year of problem-based learning at Sherbrooke. *Annals of Community-Oriented Education, Vol. 3,* 25-33. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Barrows, H.S., & Peters, M.J. (1984). *How to begin reforming the medical curriculum, an international conference.* Springfield, IL: J. Macy Foundation, Southern Illinois University School of Medicine.

Barrows, H.S., & Tamblyn, R.M. (1980). *Problem-based learning: An approach to medical education.* New York, NY: Springer Publishing.

Barrows, H.S. (1985). *How to design a problem-based curriculum for the pre-clinical years.* New York, NY: Springer Publishing.

Bennis, W.G., Berne, K.O., & Chin, R. (1985). *The planning of change.* New York, NY: Holt, Rinehart-Winston.

Des Marchais, J.E. (1990). Involvement of teachers as problem-based learner tutors in the new Sherbrooke programme. *Annals of Community-Oriented Education, Vol. 3,* 35-54. Maastricht, The Netherlands: Network of Community-Oriented Educational Institutions for Health Sciences.

Des Marchais, J.E. (1991). From traditional to problem-based curriculum: How the switch was made at Sherbrooke. *The Lancet, 338,* 234-237.

Des Marchais, J.E., Dumais, B., & Pigeon, G. (1988). Changement majeur du cursus médical à l'Université de Sherbrooke. *Revue d'éducation médicale, XI, (5) 12,* 9-17.

Des Marchais, J.E., Jean, P., & Delorme, P. (1990). Basic training program in medical pedagogy: A 1-year program for medical faculty. *Medical Association Journal, 142,* 734-740.

Feletti, G.I., & Engel, C.E. (1980). The modified essay question for testing problem-solving skills. *Medical Journal of Australia, 1,* 79-80.

Grand'Maison, P., & Des Marchais, J.E. (1991). Preparing faculty to teach in a problem-based learning curriculum: The Sherbrooke experience. *Canadian Medical Association Journal, 144,* 557-562.

Guilbert, J.-J. (1981). *Educational handbook for health personnel.* WHO Offset Publication No. 35. Geneva, Switzerland: World Health Organization.

Guilbert, J.-J. (1985). Les maladies du curriculum. *Revue d'éducation médicale, 4,* 13-16.

Kantrowitz, M., Kaufman, A., Mennin, S., Fülöp, T., & Guilbert, J.-J. (1987). *Innovative tracks at established institutions for the education of health personnel.* WHO Offset Publication No. 101. Geneva, Switzerland: World Health Organization.

Kaufman, A. (1985). *Implementing problem-based medical education.* New York, NY: Springer Publishing.

Levine, A. (1985). *Why innovation fails.* Albany, NY: State University of New York Press.

Pellegrino, E.D. (1979). Humanism and the physician. Knoxville, KY: University of Tennessee Press.

Schmidt, H.G. (1983). Problem-based learning: Rationale and description. *Medical Education, 17,* 11-16.

Spaulding, W.B. (1969). The undergraduate medical curriculum (1969 model) McMaster University. *Canadian Medical Association Journal, 100,* 659-664.

Tosteson, D.C. (1990). New pathways in general medical education. *New England Journal of Medicine, 322,* 234-238.

Walton, H.J., & Matthews, M.B. (1989). Essentials of problem-based learning. *Medical Education, 23,* 542-558.

Problem-Based Learning in Distance Education: A first Exploration in Continuing Medical Education. Engel, C.E., Browne, E., Nyarango, P., Akor, S., Khwaja, A., Karim, A.A., & Towles, A. (Ghana, Kenya, Pakistan, United Kingdom). (1992). *Medical Education, 26,* 389-401.

The Wellcome Tropical Institute has assisted countries in the tropics to establish viable systems of continuing medical education, particularly for young doctors practising in rural areas. As part of this strategy the Institute has developed material for use in distance learning. The first attempt to apply the problem-based learning approach to written material for use by an individual learner in the absence of a tutor led to a trial in Ghana, Kenya and Pakistan to compare a conventionally designed module with a problem-based learning module on the same topic for their respective acceptability, effectiveness and efficiency. The design, implementation and results of these three comparative trials are presented.

Effects of Tutors with Case Expertise on Problem-Based Learning Issues. Eagle, C.J., Harasym, P.H., & Mandin, H. (Canada). (1992). *Academic Medicine, 67,* 465-469.
At the University of Calgary Faculty of Medicine in 1991, the authors sought to determine the effects of tutors' levels of content expertise on learning issues generated within problem-based learning (PBL) tutorials. For an integrative course taken prior to clinical clerkships, the 70 students in the class of 1992 divided into ten small groups, which were facilitated alternately by content experts and non-experts. The authors found that - across 35 simulated-patient case encounters (24 with non-experts and 11 with experts) - when the groups had tutors with expertise in the clinical cases studied, the groups generated approximately twice as many learning issues per case, and these issues were approximately three times more congruent with the case objectives. In addition, when the groups had expert tutors they spent approximately twice as much time per case in overcoming identified learning deficiencies. The authors conclude that it is important for tutors (1) to be well informed about cases and case objectives and (2) to be well versed in the PBL tutoring process.

Students as Tutors in Problem-Based Learning: Does it Work? Johansen, M.-L., Martenson, D.F., & Bircher, J. (Germany, Sweden). (1992). *Medical Education, 26,* 163-165.
The private medical school of Witten/Herdecke University, Germany received its first cohort of 24 students in 1983. The medical school is in charge of the admission procedures, the curriculum is geared towards integration, early clinical contact for the students, self-directed learning, a high degree of interaction between students and staff, and some other features used in modern medical undergraduate programmes. In order to introduce problem-based learning (PBL), some students took the initiative in 1988 to organise the first sessions. They constructed problems and in doing that consulted some of the teachers. Tutors were recruited among students in the late stages of clinical training in the undergraduate programme. A problem-based tutorial programme of approximately 10 sessions was implemented for the cohorts in the first, second and third years in the curriculum.
The solution to involve advanced students as tutors in PBL has been used in some other medical schools and as counsellors/tutors for students in need of improvement with good results.

Implementing Problem-Based Learning Within a Lecture-Dominated Curriculum: Results and Process. Martenson, D., Myklebust, R., & Stalsberg, H. (Sweden, Norway). (1992). *Teaching and Learning in Medicine, 4,* 233-237.
In 1972, the School of Medicine at the University of Tromso, Norway, started a highly

integrated, community-oriented, and organ-course-based undergraduate programme. The teaching, however, is conventional: mainly lecture based and teacher directed. In 1989, the organ course on the skeletomuscular system, placed early in the curriculum, was transformed into a problem-based format. A comparison of the students' knowledge and attitudes was made between two classes: the one using problem-based learning (PBL) and the class of the previous year who had the conventional format (control group). We found no difference between the two classes in knowledge, but there were many differences in the students' attitudes toward what they had learned and the learning conditions - all in favour of the problem-based format. For instance, 69% (vs. 4% for controls) thought that the course had stimulated independent thinking, 72% (vs. 26%) became stimulated to read in the medical literature instead of merely notes and handbooks, and 87% (vs. 0%) thought that the course trained them to a great extent in problem solving.

In toto, the costs measured in number of teacher hours increased by 24% in the problem-based course (due to added tutorials), but for the students decreased by 3% their prescheduled hours. Two conclusions are that this change was a small (only one course in an entire curriculum) but important step to be taken in the Tromso medical school and that it is possible to implement considerable changes even in a conventional learning environment.

Development of Self-Directed Learning Behaviours in a Partially Teacher-Directed Problem-Based Learning Curriculum. Blumberg, P., & Michael, J.A. (Canada, U.S.A.). (1992). *Teaching and Learning in Medicine, 4*, 3-8.

Data from three sources (self-reports of students, review of accreditation and programme evaluation documents, and library circulation statistics) supported the hypothesis that students in a problem-based learning (PBL) curriculum with significant teacher-centred components nevertheless acquire behaviours reflecting self-directed learning skills. These PBL students exhibited differences in the extent to which their learning was self-directed when compared to lecture-based students. The learning process and features of this partially teacher-directed, PBL programme that fostered the development of self-directed learning are discussed. Development of these skills depended on the curriculum's adherence to the use of student-generated learning issues as a guide for defining content to be learned, but also on several other factors.

References

Anderson, S., Camp, M.G., & Philip, J.R. (1990). Library utilization by medical students in a traditional or problem-based curriculum. In: W. Bender, R.J. Hiemstra, & A.J. Scherpbier (Eds.). *Teaching and assessing clinical competence*. Groningen, The Netherlands: Boekwerk.

Barrows, H.S., & Tamblyn, R.M. (1980). *Problem-based learning*. New York, NY: Springer Publishing.

Barrows, H.S. (1985). *How to design a problem-based curriculum for preclinical years*. New York, NY: Springer Publishing.

Barrows, H.S. (1986). A taxonomy of problem-based learning methods. *Medical Education, 20*, 481-486.

Blumberg, P., Michael, J.A., & Zeitz, H. (1990). Roles of student-generated learning issues in problem-based learning. *Teaching and Learning in Medicine, 2*, 149-154.

Coulson, R.L., & Osborne, C.E. (1984). Insuring curricular content in a student-directed problem-based learning program. In: H.G. Schmidt, & M.L. De Volder (Eds.). *Tutorials in problem-based learning*. Assen, The Netherlands: Van Gorcum.

Friedman, C.P., de Bliek, R., & Greer, D.S., et al. (1990). Charting the winds of change: Evaluating innovative medical curricula. *Academic Medicine, 65*, 8-14.

Gagné, R.M. (1974). *Essentials of learning for instruction*. Hinsdale, IL: Dryden.

Gotterer, G.S., Blumberg, P., & Paul, H.A. (1987). Alternative curriculum at Tush Medical College. In: M. Kantrowitz, A. Kaufman, S. Mennin, T. Fülöp, & J.-J. Guilbert (Eds.). *Innovative tracks at established institutions for education of health personnel*. WHO Offset Publication NO. 101. Geneva, Switzerland: World Health Organization.

Kaufman, A. (1985). *Implementing problem-based medical education*. New York, NY: Springer Publishing.

Mitchell, G. (1988). Problem-based learning in medical schools: A new approach. *Medical Teacher, 10*, 57-67.

Neame, R.L. (1984) Problem-cent red learning in medical education. In: H.G. Schmidt, & M.L. De Volder (Eds.). *Tutorials in problem-based learning*. Assen, The Netherlands: Van Gorcum.

Neufeld, V., & Spaulding, W.B. (1973). Use of resources at McMaster University. *British Medical Journal, 3*, 99-101.

Newble, D.I., & Gordon, M.I. (1985). The learning styles of medical students. *Medical Education, 20*, 481-486.

Walton, H.J., & Matthews, M.B. (1989). Essentials of problem-based learning. *Medical Education, 23*, 542-558.

A Comparison of Problem-Based and Didactic Approaches to Learning on an Ambulatory Medicine Clerkship. Lawrence, S.L., Grosenick, D.J., Simpson, D.E., & Van Susteren, T.J. (U.S.A.). (1992). *Teaching and Learning in Medicine, 4*, 221-224. Teaching in the ambulatory setting is limited by the lack of time for in-depth discussion of common ambulatory problems. This study was designed to compare the effectiveness of a problem-based versus didactic approach to teaching common ambulatory problems during a senior ambulatory clerkship. Three outcome measures were examined: (a) student knowledge, measured objectively and by self-report, (b) student satisfaction; and (c) student self-directed learning. No significant differences by method were obtained for either student knowledge or student satisfaction. Students in the problem-based approach demonstrated greater self-direction in learning as measured by resource utilisation and number of hours studied. Conclusions related to learning outcomes, utilisation of faculty time, and implications for future student learning are discussed.

Using a Database to Analyse Core Basic Science Content in a Problem-Based Curriculum. Rosen, R.L., Paul, H.A., & Goodman, L.J. (U.S.A.). (1992). *Academic Medicine, 67*, 535-538.

As medical schools critically reevaluate their methods of instruction and as the number of innovative programmes increases, the content delivered across disciplines must be carefully reviewed. However, few methods of content analysis have been applied to problem-based programmes. In 1989-90 and 1990-91, the authors analysed the distribution of basic science content in the 53 cased in the problem-based curriculum of Rush Medical College of Rush University. They developed a content vocabulary and created a database using a widely available computer software programme. The content areas specific to each case were identified by faculty using the content vocabulary. To determine whether these content areas were actually identified by the students participating in the problem-solving sessions, the authors surveyed the 36 student participants in the classes of 1993 and 1994 and also interviewed the 15 faculty facilitators of the sessions. The surveys and interviews demonstrated that over 90% of the content areas identified by the faculty were actually covered by the students. The authors conclude that the database assists in their review of the curriculum for omission and redundancy. Other uses and limitations of this method are also discussed.

Selection of Students

Selection of Medical Students: Philosophic, Political, Social, and Educational Bases. Powis, D.A., McManus, I.C., & Cleave-Hogg, D. (Australia, United Kingdom, Canada). (1992). *Teaching and Learning in Medicine, 4*, 25-34.

The task of selecting a cohort of medical students from a pool of well-qualified applicants is complex and fraught with ethical dilemmas and organisational difficulties. In this article, we identify and attempt to formalise the constraints on the task. In response to a range of pressures (or influences) a medical school creates a selection policy, in which selectors define the "necessary characteristics" of medical school entrants, such as their personal qualities, aptitudes, demography, and so forth, Implementation of that selection policy then involves choosing a range of selection processes or techniques which can be used to find those candidates within the pool of applicants who satisfy a range of "selectable characteristics." Evaluation of the success of the selection policy involves comparison of the selectable characteristics with the necessary characteristics; this essential step can be used iteratively to achieve eventual congruence between selection policy and selection process.

Also in this article, we give specific examples of the pressures that a school may be subject to, the characteristics that are selectable, and the processes that may be used, and we consider the implications of various selection process for those selection policies. References

Allen, I. (1988). *Doctors and their careers.* London, United Kingdom: Policy Studies Institute.

Ebert, R.H., & Ginzberg, E. (1988). The reform of medical education. *Health Affairs, 7,* 5-38.

Gough, H.G. (1978). Some predictive implications of premedical scientific competence and preferences. *Journal of Medical Education, 53,* 291-300.

Gough, M., & Bell, J. (1989). Introducing aptitude testing into medicine. *British Medical Journal, 298,* 975-976.

Herriot, P. (1982). *Down from the ivory tower: Graduates and their jobs.* Chichester, United Kingdom: Wiley.

Krupka, J.W. (1977). *Empathy skills rating scale.* East Lansing, MI: Michigan State University, College of Human Medicine.

Linke, R.D., Chalmers, J.P., & Ashton, J.M. (1981). A survey of opinion among different occupational groups towards selection of medical students. *Medical Education, 15,* 414-421.

McManus, I.C., & Richards, P. (1984). An audit of admission to medical school: 1. Acceptances and rejects. *British Medical Journal, 289,* 1201-1204.

McManus, I.C., & Richards, P. (1984). An audit of admission to medical school: 2. Short-listing and interviews. *British Medical Journal, 289,* 1288-1290.

McManus, I.C., Maitlis, S.L., & Richards, P. (1989). Short-listing of applicants from UCCA forms: The structure of pre-selection judgements. *Medical Education, 23,* 126-146.

Murden, R., Galloway, G.M., Reid, J.C., & Colwill, J.M. (1978). Academic and personal predictors of clinical success in medical school. *Journal of Medical Education, 53,* 975-976.

Rawls, J. (1972). *A theory of justice.* Oxford, United Kingdom: Oxford University Press.

Richards, P., McManus, I.C., & Maitlis, R. (1988). Reliability of interviewing in medical student selection. *British Medical Journal, 296,* 1520-1521.

Rosenthal, R., Hall, J.A., DiMatteo, M.R., Rogers, P.L., & Archer, D. (Eds.). (1970). *Sensitivity to non-verbal communication: The PONS test.* Baltimore, MD: Johns Hopkins University Press.

Selected seed (Editorial). (1948). *Lancet, ii,* 333-334.

Siegler, M., & Osmond, H. (1966). Models of madness. *British Journal of Psychiatry, 112,* 1193-1203.

Stevenson, L. (1974). *Seven theories of human nature.* Oxford, United Kingdom: Oxford University Press.

Should Medical Students be Selected only from Recent School-Leavers Who have Studied Science? Neame, R.L.B., Powis, D.A., & Bristow, T. (Australia). (1992). *Medical Education, 26,* 433-440.

This study was undertaken to investigate the apparently widespread belief that in order to be successful at medical school, aspiring candidates must have a sound academic background based predominantly on the study of the natural sciences, be school-leavers aged about 18 (in the non-college educational environments such as Australia or the United Kingdom) and preferably be men. The demographic background and prior academic achievement of individual students entering the University of Newcastle Medical School between 1978 and 1989 has been reviewed and compared with their progress in medical studies. The data show that in the Newcastle medical school environment there is no significant correlation between outcome and previous study of any of the natural sciences. However, significant correlations between outcome and performance in the humanities in general, and English in particular, were found. In this regard a weak background in these subjects correlated with an increased tendency not to complete the medical course. There were no significant correlations fount between outcome and age at entry, sex or levels of prior academic achievement (within the top 10% achievement band studied). In summary, the study offers no support for the current selection criteria dominating medical school admissions processes.

Teaching and Learning

Scorpio: A System of Medical Teaching. Hill, D.A. (Australia). (1992). *Medical Teacher, 4,* 37-41.

Reform in medical education is gaining momentum through the efforts of organisations such as the World Federation for Medical Education. Through the advocacy of such bodies, educational priorities have been redefined to widen the range of educational settings, upgrade evaluation systems and promote the training of teachers as educators. A system of medical teaching has been developed which addresses these issues. It is known by the acronym SCORPIO. The key elements of the system are that it is Structured, Clinical, Objective Referenced, Problem-based, Integrated and Organised. SCORPIO involves delivering a syllabus through a series of lecture-demonstration at which students, teachers and patients gather at a defined area. Following a short introductory lecture, students rotate in small groups, through a series of teaching stations. These stations are structured to provide students with a problem-based, integrated learning experience. Assessment stations may be included before, during or after the teaching circuit. The teaching system has been formally evaluated over a period of time and now has an established place in the curriculum of this medical school.

How I Teach Medical Students as an Attending Physician. Bellet, P.S. (U.S.A.). (1992). *Medical Teacher, 2/3,* 231-239.

The General Professional Education of the Physician (GPEP) Report (1984) recommended a major re-examination of the clinical clerkship, so that medical students could master the basic skills of medicine before graduation. These include clinical observation, interviewing, physical examination, and problem-solving skills. This essay discusses the teaching approach of one attending physician during the third year ward clerkship in paediatrics. It describes how many of the goals of clinical clerkship on a day by day basis in the medical literature. This approach may serve as a model for clinical teachers of medicine in the organisation and planning of the clerkship experience.

References

Bellet, P.S. (1989). Heart murmurs in the asymptomatic child. In: P.S. Bellet. *The diagnostic approach to common symptoms and signs in infants, children, and adolescents.* Philadelphia, PA: Lea & Febiger.

Cassidy, J., & Petty, R.E. (1990). *Textbook of pediatric rheumatology.* New York, NY: Churchill Livingstone.

Dell, R. (1973). Pathophysiology of dehydration. In: R. Winters (Ed.). *The body fluids in pediatrics.* Boston, MA: Little, Brown and Company.

Duffy, D.L., Hamerman, D., & Cohen, M.A. (1980). Communication skills of house officers: A study in a medical clinic. *Annals of Internal Medicine, 93,* 354-357.

Engel, G.L. (1976). Are medical schools neglecting clinical skills? *Journal of the American Medical Association, 236,* 861-863.

GPEP (1984). Physicians for the twenty-first century: The GPEP Report. Report of the panel on the general professional education of the physician and college preparation for medicine. *Journal of Medical Education, 59,* 1-208.

Irby, D.M. (1978). Clinical teacher effectiveness in medicine. *Journal of Medical Education, 53,* 808-815.

Irby, D.M. (1986). Clinical teaching and the clinical teacher. *Journal of Medical Education, 61,* 35-45.

Kendall, F.P., & McCreary, E.K. (1983). *Muscles: Testing and function.* Baltimore, MD: Williams & Wilkins.

Linfors, E.W., & Neelon, F.A. (1980). The case for bedside rounds. *New England Journal of Medicine, 303,* 1230-1233.

McLeod, P.J., & Harden, R.M. (1985). Clinical teaching strategies for physicians. *Medical Teacher, 7,* 173-189.

Maguire, G.P., & Rutter, D.R. (1976). History-taking for medical students: Deficiencies in performance. *The Lancet, 3,* 556-558.

Menkes, J. (1990). Neurologic examination of the child and infant. In: J. Menkes. *Textbook of child neurology.* Philadelphia, PA: Lea & Febiger.

Morgan, W.L., & Engel, G.L. (1969). *The clinical approach to the patient.* Philadelphia, PA: W.B. Saunders.

Norman, M.E. (1988). Renal and electrolyte emergencies. In: G. Fleisher, & S. Ludwig (Eds.). *Textbook of pediatric emergency medicine.* Baltimore, MD: Williams & Wilkins.

Oppe, T.E. (1979). Neurological examinations. In: F.C. Ross (Ed.). *Paediatric neurology.* Oxford, United Kingdom: Blackwell Scientific Publications.

Peabody, F.W. (1927). The care of the patient. *Journal of the American Medical Association, 88,* 877-882.

Poole, A.D., & Sanson-Fisher, R.W. (1979). Understanding the patient: A neglected aspect of medical education. *Social Science and Medicine, 13A,* 37-43.

Pratt, D., & Magill, M.K. (1983). Educational contracts: A basis for effective clinical teaching. *Journal of Medical Education, 58,* 462-467.

Stritter, F.T., & Flair, M.D. (1980). *Effective clinical teaching.* Bethesda, MD: National Library of Medicine.

Tonesk, X. (1983). Clinical judgment of faculties in the evaluation of clerks. *Journal of Medical Education, 58,* 213-214.

Tosteson, D.C. (1990). New pathways in general medical education. *New England Journal of Medicine, 322,* 234-238.

Weinholtz, D. (1987). *Teaching during attending rounds.* Iowa City, IA: University of Iowa.

Whitman, N. (1990). *Creative medical teaching.* Salt Lake City, UT: University of Utah School of Medicine.

Wiener, S.L. (1979). Teaching medical students how to do histories and physicals. *New England Journal of Medicine, 301,* 1067-1068.

Wiener, S., & Nathanson, M. (1976). Physical examination: Frequently observed errors. *Journal of the American Medical Association, 236,* 852-855.

Winters, R. (1973). Maintenance fluid therapy. In: R. Winters (Ed.). *The body fluids in pediatrics.* Boston, MA: Little, Brown and Company.

Wray, N P., & Friedland, J.A. (1983). Detection and correction of house staff error in physical diagnosis. *Journal of the American Medical Association, 249,* 1035-1037.

Pelvic Examination Using Professional Patients: An Analysis of Medical Students' Evaluation of the Program. Davis, L., & Keith, L. (U.S.A.). (1992). *Teaching and Learning in Medicine, 4,* 15-18.

This study evaluated students' responses to the use of professional teaching assistants or models for the instruction of pelvic examination. Third-year medical students rated the programme on its value as an introduction to the obstetrics/ gynaecology clerkship, the specific techniques that were taught, their anxiety level, the value (or lack thereof) of having other students in the room , the amount of feedback they received, and the appropriateness of the programme in the junior year. The responses from the questionnaire were overwhelmingly positive for this method of instruction. This type of programme is usually given during the sophomore year at most medical schools in the United State; however, 52% of the students felt that it was most appropriately introduced at the beginning of the junior year. A majority, 76%, felt that other departments would also benefit from using teaching assistants or models. We conclude that these data support the widespread acceptance of this type of instructional method and discuss implications for its expansion to other areas of medical education.

References

Barrows, H.S. (1971). *Simulated patients.* Springfield, IL: Thomas.

Beckmann, C.R., Sharf, B.F., Barzansky, B.M., & Spellacy, W.N. (1986). Students response to gynecologic teaching associates. *American Journal of Obstetrics and*

Gynecology, 155, 301-306.

Billings, J.A., & Stoeckle, J.D. (1977). Pelvic examination instruction and the doctor-patient relationship. *Journal of Medical Education, 52,* 834-839.

Godkins, T.R., Duffy, D., & Greenwood, J. (1974). Utilization of simulated patients to teach the "routine" pelvic examination. *Journal of Medical Education, 49,* 1174-1178.

Guenther, S.M., Laube, D.W., & Matthes, S. (1983). Effectiveness of the gynecology teaching associate in teaching pelvic examination skills. *Journal of Medical Education, 58,* 67-69.

Hale, R.W., & Schiner, W. (1977). Professional patients: An improved method of teaching breast and pelvic examination. *Journal of Reproductive Medicine, 19,* 163-166.

Holzman, G.B., Singleton, D., Holmes, T.F., & Maatsch, J.L. (1977). Initial pelvic examination instruction: The effectiveness of three contemporary approaches. *American Journal of Obstetrics and Gynecology, 129,* 124-129.

Johnson, G.H., Brown, T.C., Stenchever, M.A., Gabert, H.A., Poulson, A.M., & Warenski, J.C. (1975). Teaching pelvic examination to second year medical students using programmed patients. *American Journal of Obstetrics and Gynecology, 121,* 714-717.

Kretzschmar, R.M. (1978). Evolution of the gynecology teaching associate: An education specialist. *American Journal of Obstetrics and Gynecology, 131,* 367-373.

Livingston, R.A., & Ostrow, D.N. (1978). Professional patient-instructors in the teaching of the pelvic examination. *American Journal of Obstetrics and Gynecology, 132,* 64-67.

Nelson, L.H. (1978). Use of professional patients in teaching pelvic examinations. *Obstetrics and Gynecology, 52,* 63-633.

Perlmutter, J.F., & Friedman, E.A. (1974). Use of a live mannequin for teaching physical diagnosis in gynecology. *Journal of Reproductive Medicine, 12,* 163-164.

Plauche, W.C., & Baugniet-Nebrija, W. (1985). Students' and physicians' evaluations of gynecologic teaching associate program. *Journal of Medical Education, 60,* 870-875.

Rochelson, B.L., Baker, D.A., & Mann, W.J. (1985). Use of male and female professional patient teams in teaching physical examination of the genitalia. *Journal of Reproductive Medicine, 30,* 864-866.

Skinner, B.F. (1954). Science of learning and the art of teaching. *Harvard Educational Review, 24,* 86.

Stillman, P.L., Regan, M.B., Philbin, M., & Haley, H.L. (1990). Results of a survey on the use of standardized patients to teach and evalutate cinical skills. *Academic Medicine, 65,* 288-292.

The Teaching of Behavioural Sciences. Joseph, A., Abraham, S., Bhattacharji, S., Muliyil, J., John, K.R., Mathew, S., & Norman, G. (India, Canada). (1992). *Medical*

Education, 26, 92-98.

Medical Science over the last few decades has undergone vast changes. Technologically it has advanced at a rapid pace. There has been a realisation as well that the behaviour of individuals and communities also influences the occurrence of disease. Medical schools around the globe have realised the need for incorporating behavioural sciences as an integral part of the basic sciences taught to medical students. This paper presents the experience of Christian Medical School, Vellore in teaching behavioural sciences. Students are taught sociology, psychology and medical anthropology through a community-based, problem-oriented teaching programme. The students have first-hand experience of living in a community and learn by observation and interaction. Pre- and post-assessment have shown a significant improvement of their knowledge and attitude. Feedback from students also indicates that they find this programme relevant and interesting.

Experimental Studies of Learning Dermatologic Diagnosis: The Impact of Examples.

Allen, S.W., Norman, G.R., & Brooks, L.R. (U.S.A., Canada). (1992). *Teaching and Learning in Medicine, 1,* 35-44.

Two experiments investigate the role of examples in learning dermatologic diagnosis. Medical students were given a written set of normative rules for the diagnosis of six common skin disorders, followed by practice applying those rules to a set of photographic images. On subsequent testing, the accuracy of diagnosing a set of critical new items depended strongly on the diagnosis of the most similar practice item, even when the test item was typical of its disorder. This suggests that the effect of the practice items was not restricted to providing practice in applying the rules. The influence if similar practice items persisted after a week between practice and test. The implication is that exposure to many examples may be a critical component of clinical reasoning.

Learning Contracts in Clinical Education: Evaluation by Clinical Supervisors.

Solomon, P. (Canada). (1992). *Medical Teacher, 2/3,* 205-210.

Learning contracts can be a useful learning and evaluation tool within a clinical setting provided the supervisor shifts their role from one of imparter of knowledge to facilitator of learning. If this role is not assumed then a student's learning experience could be jeopardised. In a survey of 59 student supervisors, 90% found the learning contract to be a useful evaluation and teaching tool. Advantages stated suggest that the learning contract promotes negotiation between student and teacher, provides a flexible learning environment, and promotes acquisition of self-directed learning skills. These qualities are important in a clinical or practical setting where learning experiences cannot be standardised.

References

Beare, P. (1985). The clinical contract: An approach to competency-based clinical learning and evaluation. *Journal of Nursing Education, 24,* 75-77.

Boyd, E. (1979). Contract learning. *Physical Therapy, 59,* 278-281.

Gaiptman, B., & Anthony, A. (1989). Contracting in fieldwork education: The model of self-directed learning. *Canadian Journal of Occupational Therapy, 56,* 10-14.

Gross, J., & Eckhart, D. (1986). Modified contractual grading. *Nursing Outlook, 34,* 184-187.

Knowles, M. (1975). *Self-directed learning: A guide for learners and teachers.* New York, NY: Cambridge.

Knowles, M. (1986). *Using learning contracts.* San Francisco, CA: Jossey-Bass Publishers.

Sasmor, J. (1984). Contracting for clinical. *Journal of Nursing Education, 23,* 171-173.

Shepard, K., & Jensen, G. (1990). Physcian therapist curriculum for the 1990's: Educating the reflective practitioner. *Physical Therapy, 70,* 566-577.

Tompkins, C., & McGraw, M.J. (1988). The negotiated learning contract. In: D. Boud (Ed.). *Developing student autonomy in learning.* London, United Kingdom: Kogan Page.

Faculty Mentors for Medical Students: A Critical Review. Mann, M.P. (U.S.A.). (1992). *Medical Teacher, 4,* 311-319.

New concern about the psychosocial development of medical students has resulted in a call for closer relationships between faculty and medical students. This review examines the literature on advising programmes in medical schools and on mentoring generally to develop a better understanding of how faculty and students might interact. Innovative advising programmes are discussed within the context of current thought about the value and structure of mentoring relationships.

References

Adsett, C.A. (1968). Psychological health of medical students in relation to the medical education process. *Journal of Medical Education, 43,* 728-734.

Alleman, E., Cochran, J., Doverspike, J., & Newman, I. (1984). Enriching mentoring relationships. *Personnel and Guidance Journal, 62,* 329-332.

Bargar, R.R., & Mayo-Chamberlain, J. (1983). Advisor and advisee issues in doctoral education. *Journal of Higher Education, 54,* 407-432.

Blackburn, R.T., Chapman, D.W., & Cameron, S.M. (1981). Cloning in academe: Mentorship and academic careers. *Research in Higher Education, 15,* 315-327.

Bogart, G.A., & Redner, R.L. (1985). How mentoring affects the professional development of women in psychology. *Professional Psychology, Research and Practice, 16,* 851-859.

Calkins, E.V. (1987). Perceptions of the role of a faculty supervisor or "mentor" at two medical schools. *Assessment and Education in Higher Education, 12,* 202-208.

Calkins, E.V., & Wakeford, R. (1983). Perceptions of instructors and students of instructor's roles. *Journal of Medical Education, 58,* 967-969.

Calkins, E.V., Arnold, L.M., Willoughby, T.L., & Hamburger, S.C. (1986). Docents' and students' perceptions of the ideal and actual role of the docent. *Journal of Medical Education, 61,* 743-748.

Dalton, G.W., Thompson, P.H., & Price, R.L. (1977). The four stages of professional careers - a new look at performance by professionals. *Organizational Dynamics, Summer*, 19-42.

Davidson, V. (1978). Coping styles of women medical students. *Journal of Medical Education, 53*, 902-907.

Dickstein, L.J., Stephenson, M.S., & Hinz, L.D. (1990). Psychiatric impairment in medical students. *Academic Medicine, 65*, 588-592.

Dowell, A.C. (1989). Medical students with personal problems - Can departments of general practice help? *Medical Teacher, 11*, 309-313.

Eckenfels, E.J., Blacklow, R.S., & Gotterer, G.S. (1984). Medical student counseling: The Rush medical college adviser program. *Journal of Medical Education, 59*, 573-581.

Erikson, E.H. (1963). *Childhood and society*. New York, NY: Norton.

Erikson, E.H. (1968). *Identity: Youth and crisis*. New York, NY: W.W. Norton.

Flach, D.H., Smith, M.F., Smith, W.G., & Glasser, M.L. (1982). Faculty mentors for medical students. *Journal of Medical Education, 57*, 514-520.

Funkenstein, D.H. (1968). The learning and personal development of medical students and the recent changes in universities and medical schools. *Journal of Medical Education, 43*, 883-897.

Gehrke, N.J., & Kay, R.S. (1984). The socialization of beginning teachers through mentor-protégé relationships. *Journal of Teacher Education, 35*, 21-24.

Granovetter, M.S. (1973). The strength of weak ties. *American Journal of Sociology, 78(6)*, 1360-1380.

Healy, C.C., & Welchert, A.J. (1990). Mentoring relations: A definition to advance research and practice. *Educational Researcher, 19*, 17-21.

Heinrich, K.T. (1991). Loving partnerships: Dealing with sexual attraction and power in doctoral advisement relationships. *Journal of Higher Education, 62*, 514-538.

Heins, M., Clifton, R., Simmons, J., Thomas, J., Wagner, G., & Zerega, D. (1980). Expansion of services for medical students. *Journal of Medical Education, 55*, 428-433.

Hilberman, E., Konanc, J., Perez-Reyes, M., Hunter, R., Scagnelli, J., & Sanders, S. (1975). Support groups for women in medical school: A first-year program. *Journal of Medical Education, 50*, 867-875.

Hirsch, J. (1966). Medical student counseling: Problems, experiences, and some proposals. *Journal of Medical Education, 41*, 889-895.

Hodgkinson, H.L. (1974). Adult development: Implications for faculty and administrators. *Educational Record*, 263-274.

Johnsrud, L.K. (1990). *Mentoring between academic women: The capacity for interdependence*. Paper presented at the annual meeting of the American Educational Research Association.

Kirsling, R.A., & Kochar, M.S. (1990). Mentors in graduate medical education at the Medical College of Wisconsin. *Academic Medicine, 65*, 272-274.

Krick, J.P., & Sobal, J. (1985). The role of the faculty advisor in a family medicine residency. *Journal of Medical Education, 60,* 60-62.

Levinson, D.J., Darrow, C.N., Klein, E.G., Levinson, M.H., & McKee, B. (1976). Periods in the adult development of men: Ages 18 to 45. *The Counseling Psychologist, 6,* 21-25.

Levinson, D.J., Darrow, C.N., Klein, E.G., Levinson, M.H., & McKee, B. (1978). *The seasons of a man's life.* New York, NY: Knopf.

Little, J.W. (1990). The mentor phenomenon and the social organization of teaching. *Review of Research in Education, 16,* 297-351.

Lobeck, C.C., & Stone, H.L. (1990). Class mentors: A step toward implementing the GPEP report. *Academic Medicine, 65,* 351-354.

Merriam, S. (1983). Mentors and protégés: A critical review of the literature. *Adult Education Quarterly, 33,* 161-173.

Muller, S. (1984). Special issue: Physicians for the twenty-first century: Report of the project panel on the general professional education of the physician and college preparation for medicine. *Journal of Medical Education, 59,* Part 2.

Parkerson, G.R., Broadhead, W.E., & Chiu-Kit, J.T. (1990). The health status and life satisfaction of first-year medical students. *Academic Medicine, 65,* 586-587.

Pethtel, L. (1989). A four-year career and residency advising program. *Academic Medicine, 64,* 417.

Pyskoty, C.E., Richman, J.A., & Flaherty, J.A. (1990). Psychosocial assets and mental health of minority medical students. *Academic Medicine, 65,* 581-585.

Regan-Smith, M., Eisold, J., Boulter, S., & Stebbins, P. (1989). Effective use of medical school alumni to improve career counseling for students. *Academic Medicine, 64,* 574-575.

Schein, E.H. (1978). Socialization and learning to work. In: *Career dynamics: Matching individual and organizational needs.* Reading, MA: Addison-Wesley.

Shapiro, E.C., Haseltine, F.P., & Row, M.P. (1978). Moving up: Role models, mentors and the "patron system". *Sloan Management Review, 29,* 51-58.

Sheehan, K.H., Sheehan, D.V., White, K., Leibowitz, A., & Baldwin, D.C. (1990). A pilot study of medical student "abuse". Student perceptions of mistreatment and misconduct in medical school. *Journal of American Medical Association, 263,* 533-537.

Silver, H.K., & Glicken, A.D. (1990). Medical student abuse. Incidence, severity, and significance. *Journal of American Medical Association, 263,* 527-532.

Sirridge, M.S. (1985). The mentor system in medicine - How it works for women. *American Women Association News, 40,* 51-53.

Stange, K.C., & Hekelman, F.P. (1990). Mentoring needs and family medicine faculty. *Family Medicine, 22,* 183-185.

Swanson, A.G. (1984). The medical school student and the faculty forest. *Bulletin of New York Academy of Medicine, 60,* 290-296.

Taylor, R.B. (1980). The role of the academic advisor. *Journal of Medical Education,* *55,* 216-217.

Thurber, F., Hollingsworth, A., Brown, L., & Whitaker, S. (1989). The faculty advisor role: An imperative for student retention. *Nurse Educator, 13,* 27-29.

Weinstein, H.M. (1983). A committee on well-being of medical students and house staff. *Journal of Medical Education, 58,* 373-381.

Weston, J.A., & Paterson, C.A. (1980). A medical student support system at the University of Colorado School of Medicine. *Journal of Medical Education, 55,* 624-626.

Wolf, T.M., Randall, H.M., Von Almen, K., & Tynes, L.L. (1991). Perceived mistreatment and attitude change by graduating medical students: A retrospective study. *Medical Education, 25,* 182-190.

Wolf, T.M., Von Almen, T.K., Faucett, J.M. , Randall, H.M., & Franklin, F.A. (1991). Psychosocial changes during the first year of medical school. *Medical Education, 25,* 174-181.

Woolliscroft, J.O., & Schwenk, T.L. (1989). Teaching and learning in the ambulatory setting. *Academic Medicine, November,* 644-648.

Teaching Teachers

Faculty Development in the Health Professions: Conclusions and Recommendations.

Hitchcock, M.A., Stritter, F.T., & Bland, C.J. (U.S.A.). (1993). *Medical Teacher, 4,* 295-309.

This report summarises recent literature reviews and resource books on faculty development in the health professions and describes findings from articles not previously reviewed. Nine conclusions about faculty development in the health professions are drawn: 1. The concept of faculty development is evolving and expanding; 2. Research skills are becoming a major focus of faculty development; 3. Teaching skills are still a prominent aspect of faculty development; 4. Fellowships are being used effectively to recruit and train new faculty; 5. The institutional environment has become a focus of faculty development; 6. Faculty evaluation is an effective approach to faculty development; 7. The efficacy of faculty development needs better research documentation; 8. Model curricula have been developed for different types of faculty; and 9. Comprehensive faculty development centres are gaining in popularity. A set of recommendations based on the conclusions drawn is offered for those planning faculty development interventions.

References

Albino, J.E. (1984). Scholarship and dental education: New perspectives for clinical faculty. *Journal of Dental Education, 48,* 509-513.

Bland, C.J., & Schmitz, C.C. (1986). Characeteristics of the successful researcher and implications for faculty development. *Journal of Medical Education, 61,* 22-31.

Bland, C.J., Hitchcock, M.A., Anderson, W.A., & Stritter, F.T. (1987). Faculty development fellowship programs in family medicine. *Journal of Medical Education,* 62, 632-641.

Bland, C.J., & Schmitz, C.C. (1988). Faculty renewal: Concepts, strategies and lessons from the past twenty years. In: J.H. Schuster, & D.W. Wheeler (Eds.). *Enhancing faculty careers: Strategies for renewal.* San Francisco, CA: Jossey Bass.

Bland, C.J., & Stritter, F.T. (1988). Characteristics of effective family medicine faculty development programs. *Family Medicine, 20,* 282-288.

Bland, C.J., Schmitz, C.C., Stritter, F.T., Henry, R.C., & Aluise, J.A. (1990). *Successful faculty in academic medicine: Essential skills and how to acquire them.* New York, NY: Springer Publishing.

Bobbit, K.C. (1985). Systematic faculty evaluation: A growing critical concern. *Journal of Nursing Education, 24,* 86-88.

Boozer, C.H., Gardiner, J., Lee, M.M., & Rayson, J. (1983). An evaluation of a formal education training program for dental faculty. *Journal of the American College of Dentists, 50;* 46-48.

Centra, J. (1976). *Faculty development practices in US colleges and universities.* Princeton, NJ: Educational Testing Service.

Cox, C., & Ewan, C.E. (Eds.). (1988). *The medical teacher* (2nd edition). Edinburgh, United Kingdom: Churchill Livingstone.

Crawford, S.A., & Ramsey, C.N. (1984). Resident and faculty perceptions of faculty qualifications. *Family Medicine, 16,* 210-214.

Division of Medicine, Bureau of Health Professions, Health Resources and Services Administration, US Department of Health and Human Services. (1978). *Grants for faculty development in family medicine,* PL94-484-786a. Rockville, MD.

Ellerker, J.A. (1987). Construction of a learning / teaching module relating to the training of teachers in general practice: An example of international cooperation. *Medical Teacher, 9,* 97-102.

Fallon, S., Croen, L., & Shelov, S. (1985). *Measuring teaching excellence in clinical medicine: A faculty perspective.* Proceedings of the 24th Annual RIME Conference, 257-262.

Fleming, M.F., & Bogdewic, S. (1985). Faculty orientation within departments of family medicine. *Family Medicine, 17,* 48-49.

Fletcher, R.H. (1986). Faculty training and fellowships in research in general medicine. *Journal of General Internal Medicine, 1,* S50-S55.

Genn, J.M., & Harden, R.M. (1985). Academic staff development. *Medical Teacher, 7,* 251-255.

Hammond, M., & Collins, R. (1987). Self-directed learning to educate medical educators. Part 1: How do we use self-directed learning? *Medical Teacher, 9,* 253-260.

Hitchcock, M.A., Anderson, W.A., Stritter, F.T., & Bland, C.J. (1988). Profiles of family practice faculty development fellowship graduates 1978-1985. *Family Medicine, 20,* 33-38.

Kennedy, J.E. (1983). Faculty development. *Journal of Dental Education, 47,* 270-274.

Linder, F., & Witteman, K.J. (1984). Faculty development of teaching. *ERIC Document*

Reproduction Service, No. ED 250 979.

Linn, L.S., Lewis, C.E., & Leake, B.D. (1987). Faculty development in general internal medicine: Perceptions concerning academic survival. *Archives of Internal Medicine, 147*, 1446-1451.

Lipetz, M., Brussigel, M., & Foley, R. (1986). Rethinking faculty development. *Medical Teacher, 8*, 137-144.

Manasse, H.R. (1986). Seventy-three futures: Some thoughts and comments on faculty development. *Amerian Journal of Pharmaceutical Education, 50*, 357-358.

McGahie, W.C., & Frey, J.J. (Eds.). (1986). *Handbook for the academic physician*. New York, NY: Springer-Verlag.

McLeod, P.J. (1987). Faculty development practices in Canadian medical schools. *Canadian Medical Association Journal, 136*, 709-712.

Newble, D., & Cannon, R. (1987). *A handbook for medical teachers* (2nd edition). Lancaster, United Kingdom: MTP Press Limited.

Norman, L.D., & West, R.R. (1985). Analyzing the structure of an informal faculty development network in a school of nursing. *ERIC Document Reproduction Service*, No. ED 250 549.

Palma, L.F., Woolley, F.R., & Johnson, N.B. (1985). Research skills development in family medicine fellows. *Family Medicine, 17*, 29-30.

Palmer, I.S. (1986). The emergence of clinical scholarship as a professional imperative. *Journal of Professional Nursing, 2*, 318-325.

Phelps, J.L., Steves, A.M., Klimoswski, L.L., Hickenbottom, R.S., & Gingher, M.C. (1985). Into the looking glass: Self assessment for allied health faculty development. *Journal of Allied Health, 14*, 43-51.

Rodnick, J.E., Ransom, D.C., & Burnett, W. (1986). Community-based family medicine fellowships: A four-year experience. *Family Medicine, 18*, 102-104.

Romberg, E. (1985). Evaluating teaching in the health professions: Peers as evaluators of teaching. *ERIC Documents Reproduction Service*, No. ED 254 550.

Rosenblatt, R.A. (1983). Fellowship training in family medicine: What next? *Journal of Family Practice, 16*, 665-667.

Schwartz, M.A. (1984). Post-doctoral education for pharmacy practice faculty. *Drug Intelligence and Clinical Pharmacy, 18*, 327-332.

Schwenk, T.L., & Whitman, N.A. (1987). *The physician as teacher*. Baltimore, MD: Williams & Wilkins.

Sheets, K.J., & Henry, R.C. (1988). Evaluation of a faculty development program for family physicians. *Medical Teacher, 10*, 75-83.

Sheets, K.J., & Schwenk, T.L. (1990). Faculty development for family medicine educators: An agenda for future activities. *Teaching and Learning in Medicine, 2*, 141-148.

Skeff, K.M., & Stratos, G.A. (1985). Issues in the improvement of clinical instruction. *ERIC Document Reproduction Service*, No. ED 256 257.

Skeff, K.M., Stratos, G., Campbell, M., Cooke, M., & Jones H.W. (1986). Evaluation of the seminar method to improve clinical teaching. *Journal of General Internal Medicine, 1,* 315-322.

Slotnick, H.B. (1985). The study group: Faculty helping themselves to improve their instructional abilities. *ERIC Document Reproduction Service,* No. ED 249 908.

Smith, M.C. (1983). Measurement and use of faculty productivity data. *American Journal of Pharmaceutical Education, 47,* 357-360.

Stritter, F.T. (1983). Faculty evaluation and development. In: C.H. McGuire, R.P. Foley, A. Gorr, & R.W. Richards (Eds.). *Handbook of health professions education.* San Francisco, CA: Jossey Bass.

Stritter, F.T., Bland, C.J., & Youngblood, P.L. (1991). Determining essential faculty skills. *Teaching and Learning in Medicine, 3,* 232-238.

Taylor, R.B., & Munning, K.A. (Eds.). (1984). *Written communication in family medicine.* New York, NY: Springer-Verlag.

Taylor, R.B. (1985). Faculty orientation. *Family Medicine, 17,* 47.

Tiberius, R., Sackin, H.D., Slingerland, J.M., Jubas, K., Bell, M., & Matlow, A. (1989). Influence of student evaluative feedback on improvement of clinical teaching. *Journal of Higher Education, 60,* 665-681.

Van Bree, N.S. (1985). Preparing faculty to teach nursing research. *Journal of Nursing Education, 24,* 84-88.

The Stanford Faculty Development Programme: A Dissemination Approach to Faculty Development for Medical Teachers. Skeff, K.M., Stratos, A.G., Bergen, M.R., Albright, C.L., Berman, J., Farquhar, J.W., & Sox Jr., H.C. (U.S.A.). (1992) *Teaching and Learning in Medicine, 4,* 180-187.

The Stanford Faculty Development Programme, designed to improve the instructional skills of clinical teachers, uses a dissemination model to provide faculty development activities for medical schools across the country. Selected clinical faculty attend a month-long training programme at Stanford University Medical Center and then return to their home institutions to conduct seminars for their fellow faculty and for residents in one of three content areas: a. principles and skills of clinical teaching, b. the teaching of medical decision making, or c. the teaching of clinical preventive medicine. Faculty from institutions affiliated with over one quarter of U.S. medical schools have participated in the programme. From 1986 through 1991, the programme has trained 67 seminar facilitators form 47 institutions who have then conducted training for over 500 faculty and 200 residents. The extent of dissemination indicates that this approach provides a feasible mechanism for delivering faculty development in a wide variety of institutions.

References

Albright, C.L., & Farquhar, J.W. (1991). Principles of behavioral change. In: H.L. Greene, R.J. Glassock, & M.A. Kelly (Eds.). *Introduction to clinical medicine.* Philadelphia, PA: Decker.

Bergquist, W.H., & Phillips, S.R. (1975). Components of an effective faculty development program. *Journal of Higher Education, 46 (2),* 177-211.

Centra, J.A. (1978). Types of faculty development programs. *Journal of Higher Education, 49 (2),* 151-162.

Farquhar, J.W. (1987). *The American way of life need not be hazardous to your health.* Reading, MA: Addison-Wesley.

Gagné, R., & Briggs, L. (1979). *Principles of instructional design.* New York, NY: Holt, Rinehart & Winston.

McGaghie, W.C., Frey, J.J., Stritter, F.T., & Shahady, E. (1981). A multi-component program to increase family physicians' faculty skills. *Journal of Medical Education, 56,* 803-811.

Miller, G. (1980). *Educating medical teachers.* Cambridge, MA: Harvard University Press.

Panel on the General Professional Education of the Physician. (1984). Physicians for the twenty-first century: The GPEP report. *Journal of Medical Education, 59 (11),* 1-208.

Rogers, E. (1962). *Diffusion of innovations.* New York, NY: Free Press.

Simerly, R. (1977). Ways to view faculty development. *Educational Technology, 17 (2),* 47-49.

Skeff, K.M. (1983). Evaluation of a method for improving the teaching performance of attending physicians. *American Journal of Medicine, 75,* 465-470.

Skeff, K.M., Campbell, M., Stratos, G., Jones, H., & Cooke, M. (1984). Attending physicians' assessment of the seminar method for improving clinical teaching. *Journal of Medical education, 59,* 944-950.

Skeff, K.M., Stratos, G., Campbell, M., Cooke, M., & Jones, H.W. (1986). Evaluation of the seminar methods to improve clinical teaching. *Journal of General Internal Medicine, 1,* 315-322.

Sox, H.C. Jr., Blatt, M.A., Higgins, M., & Marton, K.I. (1988). *Medical decision making.* Stoneham, MA: Butterworths.

Stritter, F.T. (1983). Faculty evaluation and development. In: C.G. McGuire, R.P. Foley, & A. Gorr, et al. (Eds.). *Handbook of health professions education: Responding to new realities in medicine, dentistry, pharmacy, nursing, allied health, and public health.* San Francisco, CA: Jossey-Bass.

Bulletin Boards for Faculty Development. Hekelman, F.P., Glover, P.B., & Galazka, S.M. (U.S.A.). (1992). *Medical Teacher, 4,* 287-293.

Within the faculty development programme of a Department of Family Medicine at a major research university, bulletin boards offer an alternative method for communicating new information, reinforcing knowledge previously acquired, and stimulating faculty to think about new ideas. This paper describes a five-step strategy for integrating bulletin boards into a faculty development programme.

NETWORK INFORMATION

Full Members

- Faculty of Medicine, University of Newcastle, Australia
- College of Medicine and Medical Sciences, Arabian Gulf University, Bahrain
- College of Health Sciences, Ministry of Health, Bahrain
- Institute of Applied Health Sciences, University of Chittagong, Bangladesh
- Faculty of Health Sciences, McMaster University, Hamilton, Canada
- Faculty of Medicine, University of Sherbrooke, Sherbrooke, Canada
- Medical Faculty, Universidad de la Frontera, Temuco, Chile
- Xian Medical University, Xian, China
- Faculty of Medicine, Escuela Colombiana de Medicina, Bogotá, Colombia
- University of Havana, Havana, Cuba
- Faculty of Medicine, Suez Canal University, Ismailia, Egypt
- Jimma Institute of Health Sciences, Jimma, Ethiopia
- Fiji School of Medicine, Suvai, Fiji
- Department of General Practice & PHC, University of Helsinki, Helsinki, Finland
- Medical Faculty, University of Tampere, Tampere, Finland
- Medical School, University of Ghana, Accra, Ghana
- School of Medical Sciences, University of Science and Technology, Kumasi, Ghana
- Christian Medical College, Vellore, India
- School of Medicine, Gadjah Mada University, Yogyakarta, Indonesia
- College of Medicine, Tikrit University, Tikrit, Iraq
- Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel
- Medical School, University of Bari, Bari, Italy
- I.C.H.M., Istituto Superiore di Sanità, Rome, Italy
- Deparment of Hygiene and Community Medicine, University of Turin, Italy
- School of Medical Sciences, University Sains Malaysia, Kubang Kerian, Kelantan, Malaysia
- Faculty of Health Sciences, Universidad Autónoma Metropolitana Xochimilco, México
- School of Health Sciences, Universidad Autónoma de Nuevo León, Nuevo León, México
- Faculty of Health Sciences, University of Limburg, Maastricht, The Netherlands
- Faculty of Medicine, University of Limburg, Maastricht, The Netherlands
- Faculty of Clinical Sciences, Bayero University, Kano, Nigeria
- College of Medicine, Ogun State University, Sagamu, Ogun State, Nigera
- Faculty of Health Sciences, University of Ilorin, Ilorin, Nigeria
- College of Medical Sciences, University of Maiduguri, Maiduguri, Nigeria
- School of Medicine, University of Tromsø, Tromsø, Norway
- Faculty of Health Sciences, Aga Khan University, Karachi, Pakistan

- College of Medicine, University of The Philippines, Manila, The Philippines
- College of Medicine and Health Sciences, Omdurman Islamic Univ., Omdurman, Sudan
- School of Medicine, University of Gezira, Wad Medani, Sudan
- Faculty of Medicine, Health University, Linköping, Sweden
- Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand
- Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand
- Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand
- Faculty of Medicine, Prince of Songkhla University, Songkhla, Thailand
- Medical School, Thammasat University, Thailand
- Faculty of Medicine, Makerere University, Kampala, Uganda
- Faculty of Medicine, Brown University, Providence, U.S.A.
- School of Medicine, Mercer University, Macon, U.S.A.
- College of Human Medicine, Michigan State University, East Lansing, U.S.A.
- College of Osteopathic Medicine, Michigan State University, East Lansing, U.S.A.
- School of Medicine, Southern Illinois University, Springfield, U.S.A.
- College of Medicine at Rockford, University of Illinois, Rockford, U.S.A.
- School of Medicine, University of New Mexico, Albuquerque, U.S.A.
- School of Medicine, University of North Carolina, Chapel Hill, U.S.A.
- School of Medicine, Wright State University, Dayton, U.S.A.
- Faculty of Medicine, Universidad de la República, Montevideo, Uruguay
- School of Medicine, University of Zambia, Lusaka, Zambia

Members of the Executive Committee

- Prof.dr. Jacques Des Marchais, Chairman, University of Sherbrooke, Faculty of Medicine, 3001, 12th Avenue North, Sherbrooke, Québec, Canada
- Prof.dr Toye Ogunbode, Past Chairman, Faculty of Health Sciences, University of Ilorin, P.M.B. 1515, Ilorin, Nigeria
- Prof.dr. Zohair Nooman, Secretary General, Dean, Faculty of Medicine, Suez Canal University, Ismailia, Egypt
- Prof.dr. Henk Schmidt, Associate Secretary General, Network Secretariat, University of Limburg, P.O. Box 616, 6200 MD Maastricht, The Netherlands
- Prof.dr. Adelita Sanchez Flores, Universidad Autónoma Metropolitana Xochimilco, Calz. del Hueso No. 1100, Col. Villa Quietud, Delegación Coyoacán, Mexico
- Prof.dr. Sharifah Hapsah S.H. Shahabudin, University Kebangsaan Malaysia, Jalan Raja Muda, 50300 Kuala Lumpur, Malaysia
- Prof.dr. Abraham Joseph, Christian Medical College, Bagayam, Vellore 632002, North Arcot Ambedkar District, Tamil Nadu, India
- Prof.dr. Salah Eldin Taha Salih, Dean, Faculty of Medicine, University of Gezira, P.O. Box 20, Wad Medani, Sudan
- Prof.dr. Ma Xu, National Center for Medical Education Development, Beijing Medical University, 38 Xie Yuan Road, Beijing 100083, China

Central Secretariat

Pauline M.J. Vluggen, Coordinating Secretary, P.O. Box 616, 6200 MD Maastricht,
The Netherlands.

The Network of Community-Oriented Educational Institutions for Health Sciences

General Aim

The general aim of the Network is to provide mutual support to member institutions who wish to adapt their curricula to the health needs of the communities which they serve.

Main Objectives

There are five primary objectives:

- strengthening of membership institutions in their implementation of community-oriented learning and appropriate instructional methods;
- strengthening of faculty competences related to community-based education;
- developing techniques, approaches, methods and tools appropriate to a community-oriented curriculum, e.g. problem-based learning;
- promoting population concepts in the health services system and the curriculum;
- assisting institutions in countries that have decided to introduce innovations in the training of health personnel, with the ultimate goal to improve health care and to contribute to the achievement of "Health for All".

To achieve these objectives, several additional objectives have been identified:

- Facilitating the development of curricula for health professions which help students become competent in the solution of health problems of communities, as well as of individuals and families in a community context.

- Problem-based learning is seen as a powerful educational strategy to maximise students' acquisition of relevant knowledge, skills and attitudes. Specific considerations include:

  - the systematic selection of problems and population based concepts which represent the health needs of the community;
  - the definition of relevant skills, including skills in problem-solving, independent learning, critical appraisal of evidence, and teamwork;
  - the strengthening of teaching capability of staff related to community-orientation and problem-based learning;
  - the development of methods for curriculum design and learning tools appropriate to a community- and problem-based curriculum;
  - the design of procedures and tools for the assessment of student and graduate performance;
  - the evaluation of innovative programmes including their contribution to the develop-

ment of effective, efficient and humane health care, and the commitment to "Health for All by the Year 2000", as promoted by the World Health Organization.

- Implement health research programmes that include basic, applied and operational research that is relevant to health and health care problems in the community served by the institution. Particular attention is given to strengthening health systems and epidemiological research.
- Establishing relationships with the health care services and health care delivery. This link is intended to promote coordination between health care services, health manpower development and the promotion of primary care.
- Describing and developing organisational and managament strategies which maximise the achievement of institutional goals within the community setting.

The Network sees community-orientation and problem-based learning as specific issues which merit particular emphasis at the present phase of evolution of education in the health sciences. As the needs for health care and the further development of the health sciences and practices change, the Network will reconsider its priorities in the education of health professionals.

Membership of the Network

Since 1979 the membership has grown to a total of 56 full member institutions, 92 associate member institutions and 55 corresponding members in 1993. There are four types of membership:

1. Full membership can be acquired by educational institutions for health sciences which implement community-oriented education and which are willing to collaborate with other institutions in achieving the goals of the Network. Full members have voting rights.

2. Associate membership can be acquired by institutions, organisations or groups of people which are interested in the objectives of the Network and the activities that flow from them and who wish to play an active part in them. Associate membership can also be acquired with a view to the acquisition of full membership at a later stage. Associate members may not vote.

3. Corresponding membership can be acquired by individuals who are interested in the objectives of the Network. Corresponding members may not vote.

4. Honorary membership will be granted to individuals who have rendered exceptional service to the Network. Honorary members may not vote.

Enquiries should be addressed to Pauline M.J. Vluggen, Network Secretariat, P.O.B. 616, 6200 MD Maastricht, The Netherlands.